Navigating Organized Urology

A Practical Guide

Stephen Y. Nakada
Sutchin R. Patel
Editors

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ISBN 978-3-030-20433-4 ISBN 978-3-030-20434-1 (eBook)
https://doi.org/10.1007/978-3-030-20434-1

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This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

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Chapter 1
Knowing Yourself

Stephen Y. Nakada

Self-awareness

Understanding yourself, and how you are viewed by others, is not simple. In the world of organized urology, there are numerous different interactions you will have, in your clinical career, academic career, and administratively. Beyond this, of course, there are all of your personal relationships, which also eventually play a role in your professional life. I believe that the sooner you begin to acquire some self-awareness about the style, habits, and overall image you emote to others, the better you will perform in all phases.

Through trial and error, you will eventually come to several fundamental conclusions about yourself. I am not an expert in this field, and thus my statements are from my experience. For instance, are you an introvert, or an extrovert? These terms are defined in Fig. 1.1. To some extent, like everything, these categories represent a continuum. However, knowing where you sit on the curve helps you with your decision-making style right from the beginning.

Once grounded enough in the profession, there are various excellent reference tools to learn about your style as a clinician, manager, and colleague [1]. These tools require input from others, and require you to have a network of people who will fill these forms out responsibly. Typically, great feedback is scarce, but it is usually best from coworkers, and can offer you a general profile of your personality and leadership style. When involved with professional groups and societies, the use of 360° evaluations is a common tactic. Take these exercises seriously, as the data is very valuable. I highly recommend profiling, which numerous services offer. Overall, while somewhat generic, you are placed into categories, which can personally help you in several ways.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_1

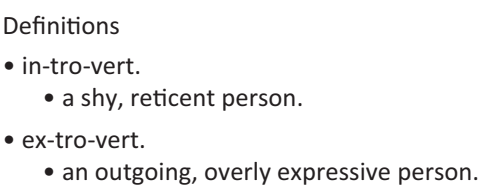

Fig. 1.1 Definition of introvert and extrovert

First, you can identify areas of improvement for yourself, and I would develop a strategy to improve your areas of weakness, and perhaps more logically avoid situations that focus upon your areas of weakness. For instance, I underwent a 360° evaluation early in my career, and it was performed as a board group to help our communications at board meetings. I proved to be a poor listener, spoke too much and often appeared disinterested. Certainly, the latter could not have been further from the truth (at least in my mind!). Regardless, focusing on listening and on faciliatory communication became a focus for me. The 360° evaluation for some, was an "insult," or a "waste of time" but I saw it as a valuable opportunity. I have observed most leaders exhibit great levels of interest and a supportive demeanor, they are great listeners, and they can communicate a lot with an economy of words. For me what an eyeopener!

But admittedly it is not so simple. While didactic classes are helpful, your natural abilities play a role [2]. Another, important alternate approach, can be gleaned from the greatest modern golfer, Tiger Woods. When Woods entered the 2000 British Open which was held in St. Andrews, he was on track for his Tiger Slam (winning all four majors consecutively) [3]. The problem was that there are a record number of sand traps at St. Andrews, and Woods was a mediocre sand player by his standards. For Woods, one approach would be to improve his sand play, but the key strategy for him was that he did not hit his ball in a sand trap all week and won the tournament by a good margin. Mr. Woods avoided sand traps and opted for more difficult shots into greens, which was a strength of his game. The lesson is, even after improvement, one should select situations to exploit areas of strength and avoid situations that focus on one's weaknesses. For instance, I have learned to position myself for "delivering the message" which is a strength for me, rather than try and create opportunities for me to "collect the feedback." This is better assigned to someone else more naturally gifted at this whenever possible.

Priorities

Prioritization seems logical and simple, but in truth it is one of the harder things to do effectively. The challenge is how to prioritize what we set out to do, and how we use those priorities to create and *execute* a plan for our careers moving forward. The execution of prioritization relates to organized urology in this way: if

you seek to be an academician focused on bench research, or a physician executive leader, or an innovator in surgical education what is the path forward, and how do I get on that path? Or maybe you just want to be the best practicing urologist you can be, or practice the least urology you can. I strongly believe all of these paths require the same fundamental starting point. Performance, purpose, and passion are my "3 Ps" to success in prioritization and execution, and I have not identified anyone else coining this phrase, so for now it goes unreferenced (Fig. 1.2).

It is misguided to start out of the gate wanting to be an academic urologist, without first being a great clinical urologist. More importantly, the same goes for all paths. Want to do less urology? You better be good at it. Early in one's career, performance must be prioritized, and learning and studying to become the best clinician you can be is the first priority. In some ways, this simplifies things for you, and I found in many ways my career goals were the least conflicted as a resident. How many people as residents enjoyed all aspects of urology? I believe it will be the good ones that feel that way at some point.

Finding purpose, the second P, is an emotional decision, that is made by most successful urologists. Perhaps one good way to think of "purpose" is to identify something that gives you professional satisfaction. It may be a cause, or moments (certain fulfilling cases), innovative breakthrough or practice decision that allows one to develop purpose. For me this was minimally invasive surgery, and studying innovation in this field gave me great direction. Decision-making, or prioritizing and executing my plan made sense, and my career became focused on acquiring tools to get better at this. Eventually, leadership and mentoring would take priority. Your priorities and thus purpose can change, or more accurately evolve, but I believe for many they don't have to. For instance, the "chairman conundrum" is a great example. Most of us realize that the attributes that often position you to become chairman (success clinically, in research and a national reputation) hardly prepare you, or advantage you for the roles of mentorship and personnel management which are vital to this role. You can add social and emotional awareness to that list as well!

The last P, passion, is typically the most elusive. Logically, a path to doing as little urology as possible is hardly passion in the typical sense, but it could be. I believe passion is the ticket to extraordinary success, if you seek this. What does passion do, positively for you and your career? It lengthens the workday, it decreases your fatigue, it explains taking extreme measures to achieve success and it explains unrelenting behaviors. This enables one to produce more than expected, or even more than is wise. Passion leads to followers, and followers leads to a

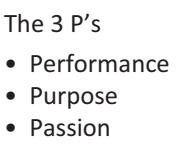

Fig. 1.2 The 3 P's to success in prioritization and execution

following, which are often good things. Alternatively, this can lead to an unbalanced life, and more importantly lead to burnout and broken relationships (see Chap. 14). As such, balance plays a role, but I would not call it a priority in this paradigm. To summarize prioritization, I believe this is an evolving process, and requires ongoing check-ins with your ongoing self-awareness.

Relationship Management

There are 3 general relationships you will have in your career: with your boss, or superiors, with your colleagues, and with your subordinates (Fig. 1.3). The modern era has led us to see this traditional separation to be dwindling, but it is my belief that while in the technical sense this distinction remains, how you manage these relationships has changed dramatically. The power differential, or management of subordinates, has become critical, and for most reading, this book this aspect will expand in size and scope. Potentially this situation is a veritable minefield. Let's review these 3 general relationships, and potentially how to navigate them.

Bosses

Starting with your boss, here are 4 reasonable initial pillars to work off of: show up early, have a list, show appreciation, value growth opportunities (Fig. 1.4). What does your boss do that you don't? What can you learn from that? What are his/her weaknesses?

In general, I have viewed time with my boss as opportunity, and generally a little extra time never hurts. Thus, if I have a scheduled a 4:30 pm meeting, I will arrive at 4:20 pm or so, no earlier, no later. That way, if early, I get extra time,

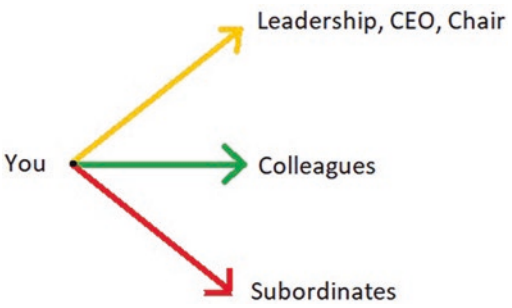

Fig. 1.3 The 3 general relationships in your career

Typical List for Discussion

- Secure approval of new staff consideration*
- Review current funding priorities
  - Clinical education nurse
  - Research assistant
  - Data management
- Does he need me to lead this new search committee?
- Any ideas for outreach strategies

Fig. 1.4 A typical list for discussion with your boss

or allow my boss to finish with me earlier. If the meeting does start on time, it gives me time to relax, potentially mingle with his staff, which is also beneficial. I believe faciliatory, or collaborative type relationships are best, and nowhere does that work better than with one's superior.

I always have a list of topics, that I am prepared to cut short, depending on how the meeting goes. I will prioritize these, and in fact if a topic has to be tackled I will asterisk it (Fig. 1.4). The conversation is 2 way, so I will often check in first, asking if there is anything that my boss needs to talk about. If yes, I am immediately assessing my list and priorities. In discussions led by the boss, I try to use the word "we," and try and be patient, and to offer help, as well as to as clearly and simply as possible relate to the boss things that I might need to accomplish whatever the mission is.

For every good deed, there must be appreciation. I have found being appreciative is a key trait to have, and one should begin to see challenges, or assignments as opportunities rather than chores whenever possible. If you naturally cannot do this, at least recognize this and begin to reframe your outward approach. There are many opportunities for growth when "leading up," and learn to value and embrace those. Beyond the project, trust, connections, and better opportunity are around the corner. Avoid the mentality that you are somebody's "trash can." I have found that persistent growth, or daily self-improvement may alter, or in fact improve your final plan, as you may not even know what the ceiling is for your potential (see Chap. 16).

Finally, growth opportunities must be part of the plan, so knowing your own skill set will help you follow your growth opportunities. I would be clear about the growth opportunities you seek, just be consistent and concise. For example, "I am interested in leadership opportunities at the system level" is simple and clear enough. Or, "if you need someone to lead a task force on funds flow I have the bandwidth to do it" is another feasible verbiage. Regardless, a lot can be learned from the boss; I observe strengths, weaknesses, tactics, style. Aside from adapting to the leadership model that is emoted, this relationship offers the chance to learn and observe an approach on a larger scale.

Colleagues

While theoretically the most comfortable relationship, relationships with your colleagues are always changing and can become complex. Logically it makes sense to give support, share as much as you can, and measure up. Your colleagues provide the safest haven to assess your style and make modifications. As well, study your colleagues closely; how do they relate to others? How do they use their connections? These are indeed valuable lessons. Certainly, some element of competition occurs with your colleagues. This is often "trial by fire," and generally the nod goes to the skilled, collaborative colleague rather than the "loner."

Moreover, the intrigue of your relationships to colleagues is that these are truly a matrix. As you or they advance, you can rise into boss status or drop into subordinate status quickly. The old adage, be nice to the people on the way up as you will see them on the way down is very true. This can be driven by governance (becoming President for a term in an organization) or from an experience standpoint, or by chance. As a result, identify how you handle these "changes." I recommend you seek to evolve to a "congratulatory, or champagne toasting" style rather than a jealous style. There really is little benefit to the latter. I had a great urologist colleague that I had worked with for 6 years prior to me becoming urology chief. Whenever I wasn't sure what to do with a case or needed clinical advice, I would page him and ask his advice, as he was based at another hospital. Finally, in my second year as chairman, he pulled me aside and asked me to stop paging him to ask him about tough cases. When I asked why, he said, "it scares the daylights out of me every time I see your direct line on my pager!" From this, I learned a good lesson about the personal dynamics of changing status with your colleagues.

Subordinates

Clearly more effective interactions with your "direct reports," subordinates, and trainees, is where the money is today. Caveat emptor, there are many complexities here. I highly recommend all professionals take some formal unconscious bias training. The world is changing rapidly, and even teachers of the training course admit to subtle indiscretions regularly! Meaning well is not enough today, in today's world of extensive social media (see Chap. 13). First, realize to the best of your ability how you are perceived as a leader. Are you hierarchical, a good listener, a good communicator? How are you going to know this? There are the 360° surveys, so take them whenever you can. Direct feedback helps, but I honestly believe "constructive feedback" is often a scarce commodity. Remember, people will be nicer to you as a boss than if you were a colleague; it is a certainty, it is human nature. A good rule of thumb in managing down is seek respect, but not more than that. Or put another way, there are social limitations to your leadership of a group that should not disappoint you. Whenever we recruit or interview new job candidates, I always ask my

administrative team for their feedback. This is part of the reason they are involved in the interview day, with transfers to locations, or at breakfast or lunch. The reason for this is that how candidates treat the staff is quite telling to me. It is one thing to interview with me, or the other leaders. In fact, for the candidate this is the time of "managing up," and is certainly an important skill we have already discussed. On the other hand, interactions with staff, regarding payment of travel expenses, details of the visit, answering emails, complaints about the travel glitches, are all evidence of behavior that relate to "managing down." You would want this information as well, of course. One year, we were interviewing a candidate who was terrific on paper, and the leadership and faculty were impressed. However, once I asked my administrators about this person, they related a completely different story. Unresponsive to emails, accusatory nature, and even simply rude. We decided not to hire this individual, and subsequent history would say that was the right decision.

In summary, relationship management should evolve into a "zero hierarchy" model in the perfect world. Yet we do not live in a perfect world. I do note that in time I can place trusted subordinates in the colleague category, and vice versa. More importantly, with time you should recognize and embrace a time when your boss moves you into the colleague category. You will know when this happens, and for many of you, it will, particularly if you have an enlightened leader.

Tips for Knowing Yourself

1. Do you understand what makes you truly happy professionally? Seek roles that add to your job and life satisfaction.
2. Do you know your strengths and weaknesses? Focus on positioning yourself to use your strengths, but also create a checklist of ways to improve your weaknesses, as well as ways to minimize exposure of those weaknesses.
3. Once you know yourself well enough, it makes sense to partner with people who have different skill sets than you.
4. First focus on being the best clinician you can be. Next, identify your long-term priorities and focus on opportunities that lead to success with those priorities.
5. Make a list of all the people you have a professional relationship with, and assess your rapport with these individuals. Do you prefer "leading up," working more with colleagues, or mentoring your direct reports? Measure your progress in these 3 fundamental areas and create a timeline of success.

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Chapter 2
Finding the Right Job

E. Jason Abel

Before you apply for a job, it is important to spend some time and honestly evaluate how you would envision your ideal future career. Every young doctor has different aspirations for his or her career. The first step should be introspective, to define and prioritize what you value most. Because the ideal job is completely different for each individual, I found it helpful to write down a description of my ideal job as a starting point. This description evolved significantly as I gained experience and insight. However, many of my initial thoughts as a resident remain important in my current job.

Many books about philosophy, religion, and leadership are written with the sole intent of helping readers look inward to define goals. The importance of personalizing your approach to finding a job cannot be overstated since there is tremendous variability among careers. Your skills, talents, and priorities are unique. Likewise, your career path will be unique. Start as early as you can and write down your thoughts.

Having your individual ideal job description helps to focus your job search and strategy. More importantly, your personal list of career goals is tremendously important when you are negotiating and making decisions. At times, most trainees feel like they do not know enough about life as an attending urologist to make all the decisions about their future, which is a reasonable observation. However, if the question is turned inward, you are the only one qualified to describe your ideal future career. Throughout your training, you have undoubtably seen countless examples of the positive and negative aspects of medicine and it is probably easy for most residents and fellows to list examples of certain things that they would like to include (or avoid) in their future practice.

Although only a few important factors will truly sway your decision, it is easier to start with a comprehensive description. The list below includes some topics to

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_2

consider as you develop a career plan. This list is not meant to be inclusive and you may want to include other features. Make sure to include your thoughts about how your first job will impact your ultimate career goals. After you have had time to develop your thoughts, discuss your ideas and seek input from your mentors, family, and friends. Try to prioritize which aspects of a job are most important to you and challenge yourself to clearly define your goals.

Planning Your Career in Organized Urology

LOCATION: What geographic location and practice setting will be ideal?
CLINICAL: What type of clinical practice will be rewarding for you?
RESEARCH: How important is it to include research in your future career?
TEACHING: Do you want to teach residents and fellows?
FINANCIAL: How can you maximize your financial compensation?
PERSONAL: What are the thoughts of your spouse or significant other and family?

LOCATION: Geographic location is an important factor for everyone to consider, especially since there is a limited amount of desirable jobs in any location at a given time. Of course, it may be easier to find a job if you are willing to look broadly, so it helps to be as open-minded as possible. Also, remember that it is not uncommon to change jobs as new opportunities become available. Even if a specific geographic location is critical to you, it is wise to consider all the regional opportunities so that you can make an informed decision and understand your ability to negotiate in your future job.

In addition to geographic location, you will want to consider whether you would prefer to be in a larger or smaller practice? In a more rural, small city or urban environment? In a private practice setting or at an academic institution?

CLINICAL PRACTICE: A "typical" urology practice in organized medicine is almost impossible to define. When comparing two urologists who received identical training, their clinical practices in organized medicine may be completely different. What type of practice will be rewarding for you?

As a resident or fellow, you likely observed several successful clinical practices. I remember noticing how talented my mentors were in the operating room and how well they communicated with patients. Other factors to consider include:

- How many patients will be in your catchment area and what are the needs of those patients? Are there insurance patterns or other barriers that enable or prevent your practice from growing?
- What type of team do you want to help support your patients? Physician assistants, nurse practitioners, nurses, and medical assistants play vital roles in many practices to help you provide excellent care.

- Is your employer going to market your expertise? If you are trying to build a new program, you might need to gain exposure especially in competitive markets that have established referral patterns.
- Are there adequate facilities for your future practice? For example, having urodynamics facilities, a surgical robot or a pediatric hospital may be important for your success. If these are not available, will your leadership support the development of facilities?
- What is your ideal amount of time that you would like to spend each week in the clinic and operating room?
- How important is it to you to have a flexible schedule or be able to take extended vacations?
- Will you work at one hospital? Many urologists travel to different locations or see patients at outreach sites.
- How will on-call responsibilities impact your job?
- Do you want to focus your practice or subspecialize within urology? Although it is becoming popular in large modern urology groups, subspecialization is not always possible or preferable especially early in your career. Your ability to focus clinically is contingent on leadership decisions and the willingness of your partners to provide complimentary services.
- Do you want to see a large proportion of patients with complex problems? Surgeries that are more complex can be rewarding but also may be unpredictable and take time from scholarly activities. Rounding on inpatients is also labor intensive especially when you have to travel to several hospitals.

Most young urologists are eager to become clinically busy. However, you can become "too" busy clinically early in your career, which may affect your career development negatively. The definition of too busy is different for everyone, which is why it is helpful to define your career goals upfront.

RESEARCH: How important is research for you? Exposure to basic science, translational, clinical, and health services research is common at urology training programs. Many graduating residents and fellows will include research in their careers. Research involvement improves understanding of clinical problems and has the potential to improve patient care, but it also requires dedication and sacrifice. In order to make scientific progress and improve treatment of urologic conditions, it is critical for Urologists to be actively involved in research. However, with changes in health care, there is always pressure for more clinical productivity, limiting time for research.

If you decide to include research in your career, you will need a strategy to find the right job. How prepared are you to do research independently? Will you need a lab for basic or translational research? Do you want to participate or design in clinical trials? Will you need research assistants to help in lab or with clinical or health services research? How will you identify an institutional mentor? Will the resources of a major research institution benefit you? Will you apply for a career development grant as a bridge to independent funding? Above all, you should

prioritize how important research is to you. Many successful researchers in urology took jobs early in their career with fewer clinical responsibilities that allowed them to focus and develop their research expertise.

TEACHING: Helping to train the next generation of urologist can be one of the most rewarding parts of a job in organized urology. However, teaching is not for everyone. Education is time intensive and can go unnoticed by promotion committees. How important will teaching be in your future job?

FINANCIAL: Compensation is an important consideration for any job. There are several sources of information about urologist salaries including the Association of American Medical Colleges (AAMC) and Medical Group Management Association (MGMA). Keep in mind that differences in benefits packages or total compensation are much less transparent. There are large differences in retirement benefits (some institutions offer pensions or matching funds, etc.) and insurance packages. Other institutions may provide funds for your family's college education or low-cost mortgages. Benefits packages are unique to each job but can provide significant value beyond salary support.

Student loan debt is significant for many young doctors. If you have student loans, some institutions will provide assistance in repayment. If you are involved in research, there is a Loan Repayment Program through the National Institutes of Health [1]. If you work for a government or not-for-profit organization, you may also be eligible for the Public Service Loan Forgiveness (PSLF) program [2].

PERSONAL: One of the most critical elements to consider are the opinions of your spouse or significant other and your family. No matter where you work, your job will have a significant impact on your family. Before you look for a job, it is helpful to discuss your goals in the context of your family needs and expectations. How will a new job or new location affect your family, including their future career and educational opportunities?

Job Search Strategy

It is never too early to start exploring job options, and it is important to check back occasionally because job opportunities develop continuously. The type of jobs that you consider will depend completely on your individual job description.

Most specialty societies and journals list job opportunities. Openings are posted on websites including the AUA job finder [3] and at many of the urology subspecialty organization website. However, many good opportunities are found by networking with your mentors and peers. Ask your residency or fellowship director

to send you jobs postings. Make a list of institutions that will fit with your career goals and send them your CV and cover letter. It is important to be respectful but persistent. Sometimes, a follow-up email or call from a colleague will help you to find out if an institution will be hiring in the future.

INTERVIEW: The interview process will usually involve two formal sessions but may be less or more depending on the institution. There are many books written on how to optimize your interview skills [4], which may be of benefit to review. From your ideal career description, build a list of questions for each job. When you interview, try to ask thoughtful questions to the appropriate person. For example, ask your chairperson questions about how you might accomplish your career goals and talk to a department administrator about benefits packages. Asking thoughtful questions is often seen as an indicator of preparation and quality in an applicant.

Negotiating Your First Contract

After you have received a job offer (or more than one), you are generally sent the proposed terms of the job. Check over this offer carefully to see how it reflects your discussions.

Refer back to your individual job description, how will the proposed job align with your career goals? Most of the time, there are some items that you can negotiate.

Two things are important to realize upfront

1. This is probably your first time negotiating a contract but it is probably not their first time. It is common to feel awkward.
2. Be courteous but do not be afraid to ask for things that are important to your career. Asking respectfully will not be seen as offensive. The best opportunity to ask for more resources is before you accept your first job.

Look at each item and decide whether the resources offered provides a good opportunity that you will develop the career that you envisioned. Increases in salary may be negotiated successfully, but most institutions have a range for new positions. You have a stronger position to negotiate other resources in your start-up package because your successful career development is common interest for you and your employer. Occasionally, there may be other resources that are not initially offered (for example to pay for a laboratory assistant). Similarly, if you are interested in research, you may be able to negotiate more protected time than is initially offered. It is always helpful to have a lawyer review any contracts, although institutional contracts are more likely to be standardized when compared to private practice models.

Overall Advice on Seeking a First Job

Look for the best environment that fits with your career goals. Finding a fertile positive environment to begin your career can be more difficult than it seems, and some faculty leave their first job because the environment was not what they expected. One reliable indicator of a program's environment is the current and past faculty.

In my opinion, the most important part of the environment is the leadership and overall direction of the program. Have others with similar career goals been successful at that program? Is there a record of developing young faculty within that department? Look for objective examples that you will be valued and that resources will be available for your development. Your chairperson will be tremendously important to your success; organized medicine is a team sport, and you need a strong captain.

Look for an environment with broad resources that align with your interests when possible. Having collaborators and mentors outside urology will likely be a key in the future and a formal mentorship program is often helpful.

Your future will not be someone else's past or present. Urology is an amazing field, with a vibrant history of innovation and many talented surgeons leading the charge to improve medicine for the next generation. Not surprisingly, many trainees identify with individual attending physicians as role models when they envision their future practice in urology. However, it is crucial to understand that the future will demand changes and you will have to adapt your practice just as your role models adapted their practices.

As a first year resident, I watched a talented senior surgeon perform an open radical prostatectomy with tremendous precision and skill. I felt compelled to learn as much as I could, imagining that I would use these open prostatectomy skills commonly in my future career. I asked the senior surgeon how he had learned and was shocked that he had scrubbed for only a handful of open prostatectomies during his own training. His mastery of open prostate surgery was an adaptation in response to the evolution of prostate cancer treatment during his career. Interestingly, the same surgeon adapted again to use a robotic approach for prostatectomy by the time I had finished residency.

The ability to adapt is critical for success not only in clinical medicine but also for researchers, who build on the incremental knowledge of the last generation. When you are envisioning your future career, it is wise to set goals based on becoming an expert in a disease process rather than thinking concretely. Research, education, and other academic pursuits will also undoubtably change in the future. The landscape of academic medicine is changing with an implicit goal of improving patient care. The future may bring stronger competition for funding and the urologist's role within organized medicine will undoubtable change. However, changes will also provide new opportunities for talented and adaptable urologists to become leaders in organized medicine.

Take Home Points

- Write down a description of your ideal career goals and your ideal first job. Although it may change with your experience, it is helpful to organize and focus your thoughts.
- Seek advice from others at many levels (early and later in their career) since you will gain valuable and different insights from each.
- Look for jobs that match your career goals. Evaluate whether the environment and leadership at each job will help you to achieve your goals.
- The future of organized medicine will provide opportunities for urologists who are able to adapt to changes.

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Chapter 3
The Role of the Educator

Byron D. Joyner

No significant learning occurs without a significant relationship.

James Comer, MD

In 1910, Abraham Flexner, changed a primarily proprietary-driven profession into a hospital-based, patient-centered, research-oriented and education-focused profession. With the publication of the Flexner Report, the trilogy of graduate medical education (GME) was born: patient care, research, and teaching. Each of these tenants was regarded as equally important. Patient care has always been the primary focus of the medical profession while research and teaching have become increasingly more subordinate. Of the three, teaching continues to be undervalued but can be very rewarding for medical educators.

There are as many methods of teaching as there are teachers. But, the model that was used as one of the earliest forms of medical instruction, was the apprenticeship model. According to ancient Egyptian papyri [1], it started around 440 BC. The apprenticeship model has always been a very personalized approach to teaching. Even today, apprenticeship continues to be the mainstay of medical education. The long-term relationship between the mentor and the learner allows the mentor to directly observe the pupil, which, in turn enables the mentor to grasp the true needs of the learner and correct behaviors over time.

The Halstedian approach to surgical education epitomized the apprenticeship model of teaching. This Germanic style of residency training started at the Johns Hopkins School of Medicine in 1889 [2] and remains the cornerstone of all surgical training programs. The folklore of this regimented program taught trainees that staying up all night on call was a chance to learn more. With the Halstedian

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_3

apprenticeship model "bumping into education" then, has been one of the hallmarks of all medical training.

Over time, though, this model has become impractical and unsustainable. In today's busy, volume-driven clinical environment, trainees rotate with a different mentor every day, and in some cases, several mentors a day, with little reinforcement of good behaviors and rarely time for critical feedback or self-reflection. The GME teaching mission continues to be eroded by tensions between hospital demands and the complexities of patient care. Additionally, Halsted's principles have been chipped away by scientific advancements in educational theory, new innovative technologies, as well as external and internal pressures on the clinical learning environment.

New training techniques are based on sound concepts of how motor skills are acquired. Recently, Fitts and Posner's [3] three-stage theory of motor skill acquisition has been appreciated more with the emergence of surgical innovation and high-fidelity simulation training. In simulation centers, trainees can (1) have a set schedule to learn, (2) make errors in a nonthreatening environment, and (3) receive feedback for which they have time to reflect on the proper techniques and (4) discuss next steps for learning. Simulation-based medical education (SBME) provides a new foundation upon which structured surgical training can take place intentionally, consistently, efficiently and safely.

More academic medical centers (AMCs) are setting aside time for faculty to train residents in their simulation centers so that residents can be taught in a safe environment before they are taught on patients in the operating room. In this manner, AMCs are acknowledging the value of teaching residents in simulation labs. Furthermore, AMCs are valuing faculty time to instruct trainees by providing financial support, as well as, credit toward promotion. Other benefits of "sim centers" are that they have stimulated metacognition about surgical training, produced innumerable papers on the science of surgical education and certification; and afforded more integrated learning in all surgical fields [4].

Although simulation centers are becoming more common, they are not standard practice for teaching all surgical ingénues. There are many barriers to creating sim centers. The most common barrier is the cost-benefit and cost-effectiveness of simulation in medical education [5]. Training faculty and then allowing them to have time to train residents in the sim center, seem cost-prohibitive but, over time, may be cost-effective because these faculty might improve quality of care and decrease patient errors.

Other challenges to surgical training, in general, include a required, shorter resident work week, higher volume, more complex patients and an emphasis on improving efficiency and decreasing error. All of these realities take away from teaching the learner. The process of teaching takes time, too. Teachers require time to identify learners' needs and time to evaluate their deficiencies; time to develop a curriculum; time to actually teach (including providing feedback); and time to evaluate the teaching process to make improvements.

The role of the surgical educator is simultaneously to care for the patient and to teach the learner. Balancing the two can be tedious. But, with purpose, practice, and patience, teaching can be learned and can be fun. Without caring about the

patient and the learner at the same time, the process of teaching becomes dull and the outcome is always diminished.

Medical education continues to be an unfunded mandate. And, so in order to capitalize on educating trainees, we must achieve our GME mission by not wasting time and effort. In order to achieve the combined goal of caring for the patient and teaching the trainee in a time efficient manner, various strategies have been suggested [6]. According to Irby, there is a three-step teaching process that can be adapted to any clinical learning environment: (1) identify the learner's needs, (2) teach rapidly, and (3) provide feedback. Knowing these three basic steps and practicing them when a "teaching moment" arises, will improve teaching performance.

The first of Irby's steps is to *identify the learner's needs*. You can do this most efficiently with the knowledge of how learning skills are acquired. Fitts' and Posner's three-stage process of skills acquisition is related to the four psychological stages of competence, described originally by Noel Burch but subsequently attributed to Abraham Maslow [7] (Fig. 3.1).

Figure 3.1 describes Maslow's evolution from "unconscious incompetence" to "unconscious competence", i.e., from not knowing what is unknown, to unconsciously knowing. When a new medical student begins to learn a task (e.g., placing a Foley catheter in a male patient), she has little knowledge of aseptic technique, the anatomy of the male urethra or which catheter size to use. This student is "unconsciously incompetent", unaware of what is not known. After a period of education and practice (*Intellectualization* in Fitts and Posner's model), the learner becomes "consciously incompetent." At this stage, the learner becomes aware of what they can and cannot do. The third stage in Maslow's psychological evolution of learning is "consciously competent." This occurs when the learner becomes

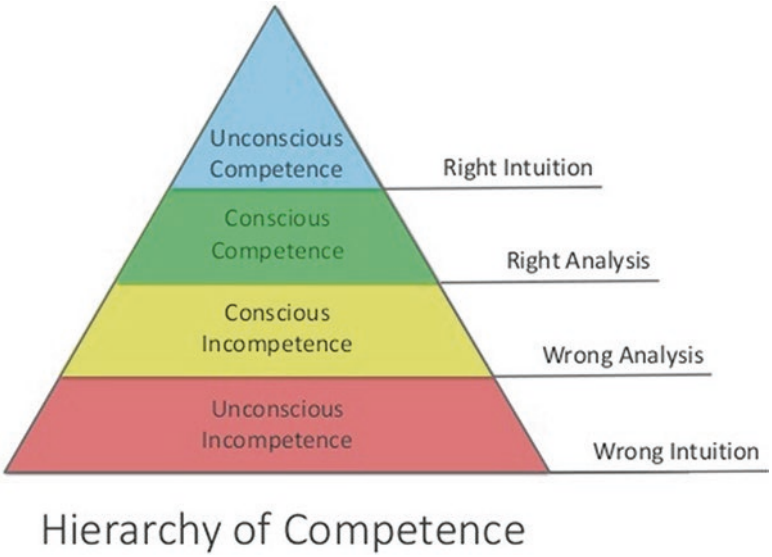

Fig. 3.1 Maslow's hierarchy

aware of what to do but the steps and process are not automated; errors can occur if concentration is not maintained during the task at hand (*Integration* in Fitts and Posner's model). At some point during this stage, the learner becomes safe to practice independently. The final stage, "unconsciously competent," is gained typically after years of practice and thoughtful reflection (*Automation* in Fitts and Posner's model).

As Vaporciyan [8] points out, there is a conundrum with training any learner but especially surgical residents: Many of those training, perform surgery at the "unconsciously competent level" whereas those being trained are dichotomously at the "unconsciously incompetent" level. That is, the master surgeon oftentimes forgets how she learned the details of a procedure and therefore, finds it hard to teach the learner who is completely unaware of the procedure, much less, the details of how to acquire the skills. As such, the first step in becoming a *master teacher* is reduce the gap between what the *master surgeon* knows and what the *novice* does not know.

Predictably, all residents have limited knowledge and gaps (i.e., "incompetence) in their learning. When these gaps are identified, you should assess the learner further and then focus on a "teaching moment." Irby et al. [9] provide several teaching models that can be used to assess, and at the same time, provide an opportunity for the teaching moment to occur.

The *One-Minute Preceptor* [10, 11], is perhaps the most widely known and researched teaching method. It involves a five-step process where you invite the learner into a conversation. During the conversation, you (1) obtain a commitment from the learner (2) probe for underlying reasoning, (3) explain general principles, (4) provide positive feedback, and (5) correct errors and makes suggestions for improvement.

Activated demonstration [12] is another model that is most meaningful during a patient encounter when learners are unfamiliar with a particular problem. This model is perfect to use in the clinical setting or in the operating room. Activated demonstration occurs when the learner is given a specific assignment during which time direct observation of the task or procedure should occur. For example, during a hypospadias procedure, the teacher might say, "Watch the position of my wrist and the angle of the 15-blade while I perform the dissection of the glans penis to create the glans wings." Following the dissection, you *activate* the learner by asking her to describe what she observed. A brief conversation ensues, as necessary and, following the procedure, you can assign independent study.

The time-honored *case presentation* is a staple in medical education, often used in the ambulatory setting or at the patient's bedside. You should be aware of the several techniques required to use this model efficiently and effectively. Essential techniques include (1) informing the patient of the transaction, (2) instructing the learner of their role, (3) physically triangulating the patient and learner with the teacher such that the patient is in the center, and (4) using the opportunity to concurrently teach the learner and inform the patient [13, 14].

Teaching while operating, in the clinic and during patient rounds, has become more challenging due to the competing priorities in the clinical environment, which have changed dramatically over the last 100 years. Having several teaching models to fill gaps in learning allows the teacher flexibility to adapt instruction to the unique needs of each learner in an oftentimes-imperfect clinical environment [15].

Feedback

"Feedback" is a fairly new term, coined by flight engineers but has been a well-known educational tool used in apprenticeship models for centuries. Feedback is a personal, one-on-one verbal communication which should be used to promote good behaviors and, more importantly, to correct learner errors. Feedback is used to help the learner get to their target, which is to develop as an independent practitioner of medicine. Sometimes, though, learners take feedback as if they *are* the target! This response, of course, consciously or unconsciously discourages the teacher from providing any feedback at all in order to avoid an uncomfortable learning environment. We shouldn't leave learners to their own devices, though, particularly the medical students and junior residents. We need to observe all learners directly and as often as possible because observation is the coin of realm of feedback.

Providing *feedback* is one of the most important parts of the teaching process [16]. In the face of this statistic, the most egregious complaint learners have is that feedback is not only insufficient but inadequate. *Effective* feedback allows learners to gain the knowledge and skills they need, especially in the current shift toward competency-based education [17]. When done well, feedback achieves two seemingly opposing goals: (1) *positive feedback* for the learner whose skills or behaviors are correct and (2) *critical feedback* for the learner with misconceptions, missteps, or mistakes. Actually, these goals are unified. Together, they attempt to improve the learner's behavior for safe, independent practice.

The medical field is not alone in its inability to provide effective feedback, but it does have some unique features that may create distinctive concerns in medical education. First, the medical culture is very hierarchical and, traditionally, has only provided what was once referred to as *negative* feedback. Times have changed. Negative feedback has been rebranded and is now called "critical" feedback. Critical feedback involves the act of correcting the learner's knowledge, behavior or attitudes by using different methodologies [18]. Oftentimes, and related to the issue of our hierarchical culture, the teacher focuses not on the learners' observed behaviors but on the learners themselves. This can lead to very bad outcomes. Therefore, be sure that your feedback focuses on the learner's *behavior* and not the learner.

Second, the Socratic Method has fallen out of favor. Before 2001, the Socratic method was a very popular way to teach during medical and surgical rounds. The Socratic method was the way in which teachers assessed the learner's knowledge and determined lapses in that knowledge. Unfortunately, in medicine, the Socratic method became known as "pimping"—a means of intimidation instead of a method of instruction. Pimping was seen as a way to embarrass young learners instead of educating them. And, even worse, it created a divide in the student–teacher relationship. Over time, trust in that relationship, so central to the apprenticeship model of teaching, was lost. That is not to say that the Socratic method should not be used. It simply has to be approached in a different manner, by communicating the purpose and oftentimes, using a different tone.

Third, there are lingering, misguided concepts that make both learner and teacher mistrust the feedback process. Most learners resist critical feedback because of tone but also because they have (1) misconceptions that all feedback is negative and (2) challenges with self-assessment, related to self-image. On the other hand, teachers find critical feedback exceptionally challenging because they (1) are unfamiliar with how to give effective feedback and (2) are fearful of ruining the learner–teacher relationship. Algirairgri's insightful article provides us with ten tips for effective feedback and reminds us to empower learners with skills to properly receive and process feedback, regardless of whom, how or when it is delivered [19].

The final concern with providing feedback in today's medical climate has to do with the brief resident rotations. Before the middle part of the twentieth century, apprenticeships lasted 9 months to several years. Now rotations are 3 weeks, 4 at the most. These short rotations tend to create fragmented student–teacher relationships and fragmented learning. The key to feedback that can change behaviors is to establish strong, trusting relationships. This is nearly impossible when residents are itinerant. In such settings, feedback should be provided and is preferred by the Millennial learner, in frequent, in-person "*tweets.*" During these brief conversations, you should capture a "teaching moment," using the One-Minute Preceptor or the Activated Demonstration models. Either of these and many other teaching models, can be structured as nuanced conversations to identify gaps in the learner's knowledge, present principles and provide feedback, as necessary. Most teaching models are useful as long as they are comfortable for you and assiduously adapted to the learner. These brief, objective conversations, also, have the added benefit of conveying respect for the learner.

The basic foundation of effective feedback is *honesty*. Feedback should go beyond praise, which is important because it confirms for the learner what is going well. But, providing positive feedback is easy to give by teachers and to accept by leaners. The most stressful part of teaching is providing *critical* feedback. Critical feedback is essential for correcting misconceptions, missteps or mistakes. Developing confidence around delivering critical feedback involves valuing the learner–teacher relationship, acquiring useful feedback techniques and practicing feedback as often as possible. Also, you should encourage learners to ask for feedback.

SMART Feedback [20]

- **S**pecific—deal with the problem at hand; don't overwhelm the learner with multiple issues
- **M**easurable—the learner's level should be taken into account and feedback should be provided as such
- **A**chievable—observe the learner and allow them to be successful by *complimenting and correcting* behaviors for their specific level

- **R**elevant—feedback should relate to what they need to know for their level
- **T**imely—as much as possible, and as discretely as possible, provide prompt feedback in a private setting

Success in education can only be measured when we are skeptical because it forces us to look closer at the evidence—the ideal source of what we should be doing and what we could be doing better. Hopefully, this chapter has provided you with some insight into teaching so that you might reflect on your teaching style and make some improvements.

Ten Tips for Medical Educators

(1) Teachers are not born. They evolve through intentional practice, and most importantly, the deliberate *desire* to teach. Good teachers emanate from and are sustained by individual commitments, like creating moments to teach, connecting with individual learners, following up with them and watching them grow and succeed.
(2) Teachers should be curious about their learners. Spend time with your learners. Get to know them better so that you might determine what they need to succeed. Feedback should start with the teacher being curious: *ask* the learner about their behavior or action. After they have responded, tell them what they did right and how they could improve. Make reading assignments, as necessary and follow-up. We all have something to teach and, if we look beyond ourselves, we all have something to learn.
(3) Teachers are mentors. They are responsible for creating strong relationships with their learners. They should not, however, have a goal of being friends with their learners. *Friendship* and *friendly* are not the same thing. One is a noun and the other is an adjective. But, the real point is that teachers should be friendly with their learners but not be friends with them. First, friendship eventually erodes at the learner–teacher relationship. Second, teachers cannot discipline learners when they consider them friends.
(4) Teachers should resist social media relationships with their learners. Facebook, Twitter, and Instagram may be all the rage but they are painfully blunt social constructs for doing what should be the delicate work of forming human relationships. Social media is an excellent utility for sending and receiving data but we are not data and relationships should not be reduced to exchange of data or making binary decisions between friending and unfriending.
(5) Teachers should not ignore the broad contexts and diversity of their learners. For example, the Millennial learner, grew up with social media. She prefers frequent, brief bursts of communication that is explicit and outcomes-oriented pointed.

(6) Teachers should always be medical professionals in everything they do, from demeanor to dress. Our actions model essential messages of commitment to our patients and to our learners. We do not wear our *curriculum vitae* on our forehead for patients to see. So, we should always promote messages of improving patient care, professionalism, integrity, and accountability.
(7) Teachers need to be continuous learners themselves. In this way, we can provide proper communication, feedback, and evaluations for each new generation! Take advantage of faculty development courses and workshops. Network with other specialties and read outside the medical field. There is a tremendous amount to know, to learn and to teach.
(8) Teachers should always look for opportunities for professional development, especially for junior faculty who should develop themselves, *first.* Progress in life-long learning and achieving promotion should be beneficial outcomes of those efforts.
(9) Teachers have the opportunity to have a lasting impression on their trainees. Be consistent and fair. Champion the learning process.
(10) Teachers should remember that the coin of realm for residents is experience, real, hard experiences that provide trainees with knowledge and skills. And, we must provide them with observable and supervised experiences. But, residents must take time to reflect on these experiential opportunities and internalize their meaning in order to develop true wisdom.

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Chapter 4
The Urologist as an Effective Administrative Leader

Salimah Velji and James M. McKiernan

Urologists are uniquely equipped with the skills and experiences to serve as effective administrative leaders in the current healthcare climate. With complex healthcare challenges such as treating patients across the care continuum to identifying new, cost-effective ways to move treatment from the inpatient to ambulatory setting, the clinical subspecialty lends itself to addressing some of these broader issues in the day-to-day management of patients with urologic conditions. For example, unlike cardiothoracic surgeons who have the ability to refer to their medical cardiology counterparts, urologists are often managing patients across the surgical and medical care continuum. In addition, as technological advances have emerged in the urologic field, an increasing number of cases are moving from the inpatient, operating room to outpatient, procedural spaces. As such, the practicing urologist inherently cares for patients beyond their primary urologic condition and is often incorporating innovative treatment modules that move care outside of the hospital setting. In essence, urologists are primed for some of the greatest healthcare administrative challenges by their clinical experiences alone. Clinical experience, however, is merely one facet of becoming an effective healthcare administrator.

Before advising on how a urologist can be an effective administrator it is important to review what administration entails. Traditional healthcare administration is viewed as business administration, overseeing financial or operational functions of a healthcare organization. However, this is a very narrow definition of the array of administrative roles that exist today. Both the academic urologist as well as the urologist in independent practice have a vast number of administrative roles available to them at the departmental and organizational level. Such opportunities can range from intradepartmental positions of quality assurance officer, clinical practice director, business and finance director, residency program coordinator, or division chief. They may also involve opportunities for larger scale administrative

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_4

leadership such as department chair, hospital president, academic or clinical dean positions, chief medical officer, cancer center director, or even national or international society leadership roles in the American Urologic Association, American Board of Urology, or specialty societies. With all of these opportunities available for the aspiring urologist, a brief outline of the essential skills and values required for effective administrative leadership is appropriate. In this chapter, we will start by discussing the fundamental characteristics that differentiate an effective administrator and conclude with concrete takeaways and strategies to be successful in an administrative role. We caution that the following summary is by no means complete and should serve as a starting point for further study and review.

Looking Inward

While the roles vary in scope and function, there are fundamental characteristics that differentiate an effective administrator that begin by looking inward. The most successful administrators identify their motivation for administrative pursuits and maintain a clear understanding of their own principles of leadership.

To be an effective administrative leader, you must be clear about your motivation and goals for pursuing an administrative career. As a medical professional, taking on administrative responsibilities invariably takes away from time you have to care for patients or pursue academic or research interests. You must come to terms and be comfortable with the tradeoffs associated with pursuing a career in administration early on. You must have a concrete understanding about why you are pursuing an administrative role. For example, for some, taking on administrative responsibilities allows for them to effectively care and change the care for many patients rather than at the individual patient level through helping solve complex operational and strategic issues. For others, taking on administrative roles serves as an outlet to relieve stress from the day-to-day clinical responsibilities of taking care of patients. There are also instances where individuals take on administrative roles as opportunities to explore diverse interests outside of traditional academic medicine, including leadership, organizational behavior, strategy or data analytics to name a few. Ultimately, to be effective, you need to understand why you are pursuing an administrative career and be able to clearly articulate this.

In addition to understanding your motivation, it is important early on in your administrative career to determine your principles of leadership. These are your own core values of communication, motivation, organization, and inspiration. Such things as transparency, inspiring great performance through examples, rewarding outstanding behavior, and negative feedback in response to sub-par performance are all examples of transmitting how you will lead. Your principles may mirror your personality and your core values, however, it is important for you to communicate them to members of your administrative team early on and for you to adhere to these principles in times of great stress. That is, to be consistent in your leadership values across circumstances, regardless of the "style" you

must employ to address a certain issue. It is human nature to act less predictably in times of stress and stray from principles and this can lead to a team that loses trust. If your team members fail to trust their leader, they will most likely not follow that leader and a leader who looks over his/her shoulder to see no followers is no longer a leader.

Concrete Strategies

Once you have understood your reasons for pursuing administration and have a clear understanding of your leadership principles, you can begin practicing some externally facing strategies to be more successful in the administrative role you ultimately choose. There are many "hard" skills that make a physician more effective at administration. For example, the Physician Executive Management Center survey identified a number of these skills, including: effective communication across mediums, ability to persuade, motivate and influence people, ability to lead strategic planning, computer skills and skills in finance and people management [1]. Some of these skills can be acquired through training, education or mentorship, and without necessarily pursuing a degree in business administration. However, the softer people management skills of yourself and others are usually developed and refined through exposing yourself to relevant experiences. Below we outline some concrete strategies you can employ yourself to become a more effective administrator.

Choose the Right Role in the Right Organization for You at a Given Time

Working for the right person is a critical success factor to being successful in any role, but particularly in an administrative role that is unstructured and requires a high degree of intrinsic motivation to tackle on a day-to-day basis. The culture of an organization or team will either create a soil for you to grow or feel stunted; it is important as you evaluate opportunities to gauge whether you feel that an organization and the leader you will fall under will extract your potential based on your interactions or not. It is especially paramount that young trainees become aware of the attributes of administrators that they should seek in their early employment. This may include departmental, medical school, hospital, health system, or group practice administration. Each will play a vital role in the early success of their career. A talented young urologist without an effective administrator and leader will be like a sailboat on the ocean without a rudder. You will be buffeted by the rough seas of academic or private practice and end up shipwrecked on a random desert island. In order to avoid this fate, in addition to identifying leadership and organizations that will extract your potential, you must also seek out

an administration with leaders who are humble. Humility is generally bred from high self-esteem. Nothing is more destructive to your growing career than an environment in which the administration is formed by leaders who are abusive and resort to demeaning behavior to generate results. Abusive and demeaning behavior almost always stems from a lack of self-esteem and these leaders should be avoided at all costs.

Equally important to selecting the right boss and organization is that you select leadership roles with responsibilities that are commensurate with authority [2]. Without this balance, often you end up with a fancy title and a long list of responsibilities, but do not feel empowered or capable of achieving on your goals or expectations. Upon joining the right organization or team, you must understand their vision, strategy and goals. Remember to often re-ask what has changed so that you can continue to move towards where the organization needs to go and evolve with it, or know when to move on when your values are no longer aligned with the organization.

Be Willing to Be Uncomfortably Vulnerable

As a physician who has been trained to identify the correct multiple choice answer across the countless exams in your training, or determine the correct diagnosis or treatment plan for dire patient care situations, it is a difficult prospect to be in an administrative role where there is rarely a sole, "right answer" in any of your day-to-day decisions, but rather, several viable options. As an administrative leader, while there may be situations you are comfortable addressing based on your experiences, there will be many more that you may never have encountered before and are still expected to address with confidence. It is tempting to avoid such roles and situations or consistently defer to others so that you can be more likely to be "correct" and avoid the risk of failure. It is very important to both strive for continuous learning and improvement in administrative roles and expose yourself to unknown or uncertain situations. As a medical professional entering administration, exposing yourself to areas of uncertainty include volunteering to be on department committees, speaking up at meetings with your perspective and input, particularly when you disagree, or saying yes to opportunities to help solve issues where you do not feel 100% equipped to do so. It is both ok to take these opportunities on and express your vulnerability as this will allow you to gain more experience and confidence, and ultimately ensure that you are supported in these times of learning with the right structures or leaders.

Be Open and Accessible

Both front-line staff and administrators need a clinical resource as both a sounding board and advisor to help think through complex issues. By being an open and

accessible resource for these conversations, you are developing relationships with individuals and teams who can help you solve issues you are grappling with and also identify other issues to focus on. As discussed above, you are rarely going to have the silver bullet or "right answer" to every issue that you come across, and therefore it is important to build sincere relationships with various role groups early on that you can tap into to be more effective in how you approach various problems. Identifying the high-impact problems to prioritize is equally important so that you can spend your time wisely and again, improve your effectiveness as an administrator. Ultimately, frontline administrative and clinical staff often have the most valuable insights and experiences in order to inform administrative leaders on the most pressing issues and provide practical ideas to help solve them. In order for you to glean this valuable insight, you need to be present and available to staff; you need to make it very clear that you want to hear from team members without judgement and that you have time to do so. An example of this is to create a weekly "drop-in" session where you will be in your office no matter what else is going on to be available to your team. You must make it evident that you care to listen and that you are willing to learn with an open mind in these situations, regardless of your potential biases, in order to solicit honest, insightful input. Once you become an administrative leader who is known to be open and accessible, likely you will not only be more effective in your role, but people will begin to identify you for other roles as well.

Be Obsessed with Measuring Progress

A key feature of any effective administrator much like any medical researcher is the capacity to measure what they are trying to do. Data is a critical currency in the world of healthcare administration and when you are tasked to solve any problem or issue, it is important to figure out a way to measure the current state and set objective targets for a future, improved state that allow you and others to objectively measure your performance. This may include measuring RVU productivity, measuring wait times on telephone lines, measuring the number of infectious complications, measuring the number of publications of a department. No effective administrator can do their job without defining the goal and measuring progress toward that goal. James Harrington captures the importance of data when he said: "Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it" [3]. Often in healthcare, particularly in the hospital setting, it can be challenging to source the exact data you would like or more difficult than expected to have the ability to design and run your own reports independently. This can be incredibly frustrating and discouraging, but it is helpful in these junctures to know who you can go to help obtain this data, develop the right relationships so that people want to help you get it and be focusing as often as possible on issues that matter to the organization so that your requests are prioritized. It is also helpful to use proxies

for measures rather than aiming for perfection in data collection, and identifying future processes that you can design to help optimize data collection moving forward.

Identify and Retain the Right Talent

Perhaps the most important task assigned to physicians placed in administrative leadership roles is that of choosing and retaining strong talent. Human capital or personnel decisions are critical to the success of any organization and bad decisions made in this regard can become rapidly insurmountable. The talent in your fellow team members may be represented in clinical faculty, administrative personnel, finance team members, nurses, residents, researchers, or front desk staff. All team members play a role and no decision in this area should be taken lightly. The simplest formula for success that we have seen comes from Jack and Suzy Welch in their book entitled, "Winning" [4]. In this book they note that team members can be categorized into 4 subtypes based on the traits of behavior and productivity with behavior being on the Y axis and productivity on the X axis. For the purposes of this discussion assume the team member is a urologist joining the practice. In category 1 we have the highly functional team player who gets along well with everyone, follows the mission of the organization and is supportive of the direction the team is going in. However, this particular doctor is having hard time building a practice and is underproductive on revenue generation and RVUs as well as academic productivity. This particular type of doctor needs administration's help and his worth the investment of time and energy. In category 2 we have the highly functional, well behaving urologist who is liked by all, supports the mission of the team and is highly productive clinically and academically. This person should be left alone by the administration to serve as an example and a mentor to others for them to aspire toward. In category 4 we find the underproductive, misbehaving doctor who undermines authority, creates unrest and fights the mission of the organization, while not producing results. These may be the simplest team members to identify and are often terminated prior to you becoming an administrator; however, if they have not been, an example needs to be made of them very quickly. This group is often referred to as "lazy jerks." In group 3, we find the most common challenge in administrative leadership—the highly productive, misbehaving doctor. In every industry these individuals can be identified and often times tolerated, even elevated into positions of great power. This is a very destructive force in your organization and can act as a negative example of what will be tolerated simply because of clinical or academic productivity. It is our belief that these urologists must also be removed from the organization as soon as possible in order to prevent others emulating their behavior. It may be difficult to do so in the short-term as the loss of their productivity will hurt the organization. In the long-term however, the culture of the organization and team will be far better off without them. Moreover, the role of an administrator running a team full of category 1 and 2 individuals can be a joyfully rewarding experience.

Get People in Your Corner

As discussed earlier, developing important relationships early across the clinical and administrative teams is an important aspect of identifying the right problems to solve and helps you to consider novel approaches to solving them that may help you be more effective in your role. Getting people in your corner is one step further than developing strong relationships—this is getting to a place with individuals who will both advocate for and protect you. Creating such business partners and allies also provides you with informal mentorship and people to help teach you about the political climate or issues to look out for. Early in your administrative roles, you will need to identify such allies and a few things to consider in doing so include asking yourself whether you "click" with this potential ally, whether this person has some degree of insight into an area you need to learn, and whether this person has the credibility and respect in the organization to serve as a strong support to you. Such allies not only live in higher leadership roles, but are also your peers and direct reports at various levels of the organization.

Embrace Your Clinical Roots

Since we are discussing a medical professional such as a urologist in an administrative role, we would be remiss in not acknowledging the balance of maintaining an identity as a clinical professional and an administrator. Most successful clinical administrators are those who keep a foot in the clinical world as this gives them credibility with staff, helps them maintain a pulse on what is actually going on, and allows them to make better decisions as an administrator. Additionally, by continuing to spend time clinically, you have an easier time keeping an emotional tie to the real purpose of the organization or team and will be more likely to feel empathy for your clinical staff.

Know When to Lead Versus Manage

Traditionally leaders and managers are quite distinct. A leader's role is to create the long-term vision of the organization, whereas the manager is dedicated to keeping the organization following this vision. It is important to know in your administrative role when you need to operate with your management versus leadership hat. The simplest analogy that we have found to distinguish the roles of a worker, manager and leader is that of a team navigating its way through the jungle. One group is up on a ladder seeing over the tree tops and making sure the team is navigating in the correct direction and not about to fall off a cliff. These are the leaders. Another group is literally hacking through the underbrush and blazing a trail through the jungle floor; these are the workers. The third group is sharpening

the machetes and providing food and water to the workers; these are the managers. If this scenario seems too abstract then perhaps the famous quote by Peter Drucker will sum things up better: "Management is doing things right—improving operational performance, maximizing revenues, and reducing expenses while increasing artistic production values and audience appreciation. Leadership is doing the right things—setting organizational priorities and allocating human and fiscal resources to fulfill the organization's vision" [5].

Conclusion

Administrative leaders are tasked with creating an environment in which physicians, administrative staff and researchers can grow and prosper in their careers. This involves clinical practice efficiency, financial management, regulatory and billing compliance, effective marketing and outreach, educational program development, human resource management and talent acquisition, and creative scientific inquiry. The most effective administrative leaders take the time to be introspective to get clear about their motivations and leadership values. Additionally, there are several concrete strategies, some of which we touched on that can be helpful to employ as an aspiring clinical administrator. With the ever-increasing demands on the time and effort of clinicians, taking on the role of an administrative leader may seem like yet another burden posed to today's urologist. However, it is our experience that when done well it can provide professional rewards unlike any other aspect of your career. In fact, Clayton may have summed these rewards when he said "Leadership is the most noble of professions if it's practiced well. Nothing else helps others learn and grow, take responsibility, and be recognized for their achievements" [6]. It is with this in mind that we encourage you to pursue your own administrative leadership journey and hope these principles may guide you along the way.

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Chapter 5
The Urologist as Researcher

Wade Bushman

Research in Urology

Research in urology is characterized by enormous breadth, ranging from basic laboratory research to clinical trials and everything in between. These different avenues of investigation demand different levels of investment in money and time and need to be considered individually.

Four major types of urologic research

Bench research
Translational research
Health services research
Clinical research

Bench Research is, quite simply, tough sledding. It requires high labor input and a lot of money. You simply cannot do it yourself and that means getting good help (no easy challenge) and managing people well. The difficulties inherent in this should not be underestimated. Nothing in medical education prepares us for managing people in the laboratory and, in general, the culture clash between MD's and PhD's can be a major stumbling block. For someone venturing into an independent laboratory research effort for the first time, an experienced mentor to provide not just scientific guidance, but advice in putting together a productive laboratory, is key. Finally, lab research is slow and time-consuming. You should figure on at least two to three years from starting project to paper submission.

Translational research comes in a variety of flavors. For the sake of simplicity, we will focus on one example—application of basic science techniques to clinical specimens. This kind of research is most often collaborative—combining the efforts of basic scientists, clinicians, pathologists and/or biostatisticians.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_5

When compared to purely basic/bench research, this type is less labor intensive but still usually requires expertise and assistance beyond the senior investigators, such as lab personnel, residents or fellows. It is often moderately expensive, requiring money for specimen processing and pay-for-service analyses. An interval of one to two years from starting a project to paper submission would not be an unreasonable expectation.

Health Services Research is a rapidly expanding area. One great advantage of this kind of research is its clear-cut relevance. Whether using existing or constructed databases to address issues of current importance in a timely way, develop new clinical protocols, or standardize practice methods, it can make a real impact over the short term. Costs are generally less than for bench or translational research and the interval from starting project to paper submission vary, but can be on the order of one to two years.

Clinical research embraces everything from a retrospective analysis of clinical data/practice/outcomes to prospective trial design. The labor input, requisite financial commitment and research infrastructure needs vary tremendously. For a simple retrospective chart review, it may be no more than six months from starting project to paper submission. For a prospective clinical trial, it may be up to five years.

Finding Your Niche

Individuals choose to pursue a research interest for a variety of reasons. What is yours?

Is it an expectation, and therefore, obligatory? Is it to gain recognition in your field? Or to become a leader in your field? Is your primary motivation to help people? Is it to improve how things are done because you have a perfectionist bent? Or are you just insatiably curious and/or innovative? Answering this simple question honestly is critically important to getting onto the right path.

If doing research is to meet an expectation, then it can be a real drag. Do not shoot for the stars because of ego, you will be miserable. My advice is to find a relatively easy path that interests you and go for low hanging fruit. Just pick something doable and get it done. If your goal is recognition in your field, then focus your work in a specific area that is highly relevant to your area of practice and publish. If you want to be a leader in your field, focus your work in a specific area and publish often in top journals and speak whenever you have the chance. If your true motivation is a desire to help people, then identify areas of lagging progress or real unaddressed need. If you are channeling your perfectionist bent, focus on innovation in your clinical area. If it is the case that you are insatiably curious and/or innovative, then follow your passion(s) but avoid being diffused. Try to work on topics relevant to your clinical field and crosslink your efforts so that they are self-reinforcing and amplifying.

Writing a Paper

Writing papers becomes easier with practice and repetition. But the important thing is to get started. Different people have different ways of doing it—but this works well for most people. It is an approach that minimizes time spent trying to figure out what to say leading naturally from the mechanical and objective to the narrative and speculative. These are the ordered steps:

Title Not the final title. But a title which succinctly states what you did and what it shows.

Materials and Methods Do this first. It is very mechanical and gets you into the writing groove.

Graphs and Tables This is the data that drives the paper. Think about how to put the data together and present it in a logical way that tells a logical story; it is the most important part of the paper and the part that takes the most thought. Once these are done, the results section will almost write itself.

Results Write as a simple narrative of what was done and what was found. Do not overthink it or exaggerate the findings, just the facts. Do not offer interpretations or speculations. If one observation led to another, state in very simple terms why that next step was made. Plagiarism is bad but imitation is the greatest form of flattery. It is okay and extremely helpful to find a good paper in the similar area and/or of a similar nature and imitate the presentation of the data and results.

Discussion Briefly explain how your work addresses the question you are tackling. Summarize the results in a way that is not simply a reiteration of the results section but synthesizes the information and forms the basis for your conclusions; do not oversell. Reference previously done work in the area and describe how it complements, augments or extends previous studies. Point out the limitations of your study, unanswered questions and avenues for future work.

Introduction Write this dead last. Make it very simple. Define the problem or question addressed by your work. Set up the study—making that case as best you can that the study done was the best possible way to answer the question.

Presentation Skills

Presentation skills will improve with experience, but it is not the only way to improve. Read a book on the subject. Attend a workshop. Seek out an opportunity to see yourself recorded giving a talk or presentation. It is important to see how you come across how others see you. It is said that 90% of what the audience takes away from any presentation is their impression of the speaker.

For any presentation, less is ALWAYS better. Scientific studies have shown that talks that go longer than scheduled are much more likely to be rated as boring.

Too much information kills many a good talk. Keep it simple. A good tactic is to start by telling the audience what you're going to tell them. Then tell them. And end by telling them what you told them.

Finding Funding

The necessity of funding to support research varies with time commitment and the type of research to be done. A substantial time commitment to research often merits protected time. The goal of success in research needs to be a shared goal. For a clinician, the opportunity cost of protected time is quite significant. The faculty member should recognize this and understand that it cannot be an open-ended commitment and may require some concession in terms of expected salary. Most importantly, the amount and longevity of protected time should be negotiated at the time of recruitment. Depending on the nature of the position and research goals, some start-up funds may be provided by the department or the university.

Sources of research funding

Intramural Research Programs
American Urologic Association
Society Grants
Corporate Funding
Veterans Administration
Department of Defense
National Institute of Health

There are seven main sources of funding that can be pursued. The first is intramural research programs at your university. The second is the American Urologic Association (AUA). The third is societies such as the American Diabetes Association. The fourth is corporate support. The fifth is the Veterans Administration (VA). The last two are national funding sources such as Department of Defense (DOD) and the National Institute of Health (NIH).

Intramural Research Programs An example would be pilot funding opportunities through a comprehensive cancer center. Connect with the grants administration employees that work with your department and ask them for leads.

AUA The Research Scholar Award provides support for either one or two years for fellows and early career investigators. For a young clinician-scientist, this requires a 50% time commitment to research. The award can also be used to support a basic scientist working under your supervision. The Summer Medical Student Fellowship can provide $4000 for support of a medical student during a 10-week mentored research experience. These awards are a great source of funding but require thinking and advanced planning, so investigate them at your earliest opportunity.

Society Grants Cancer societies are preeminent in providing new investigator grants. It's slimmer pickings for benign urologic disease, but it pays to look in all the corners. The grants administration people can be of some help. Colleagues in the same field is another source of information. Also pay attention to acknowledgments of papers in your field, there are often specific funding opportunities for specific conditions such as interstitial cystitis and societies often maintain a list of relevant funding opportunities.

Corporate Funding Corporations have deep pockets and it can be tempting to pursue funding through a collaboration but beware of some pitfalls. First, the money rarely comes without strings attached. The company usually has its own agenda and your research focus may be distorted or misdirected as a result of the collaboration. Secondly, beware of conflict of interest. This issue gets more complicated by the day and you should talk to the COI people at your institution before getting involved in anything that is supported by corporate funding. Finally, collaboration with a corporation on something like a clinical trial, even a simple one, can put financial liabilities on the department. It is important to allow the departmental administrator(s) to vet the agreement in order to determine if there is potential for the department to be on the hook for a big chunk of money. The bottom line: corporate funding comes with a lot of potential pitfalls and it is important to talk to a lot of people, including your chair, departmental administrator, grants administrator, and COI folks early on and heed their advice.

Veterans Administration The VA offers a variety of funding mechanisms; holding a VA research award requires a 5/8ths commitment that can be split between clinical activities and research time. Importantly, this is a requirement for being awarded funding, but is not required to apply for funding. For someone seriously interested in pursuing research, the VA is arguably the most stable platform available for combing clinical work with investigative activities because the clinical obligations are generally well-defined and limited, the research time is paid out of the 5/8ths appointment and the funds for research are comparable to an NIH R01.

Department of Defense (DOD) The DOD is best known for funding programs in prostate cancer and, more recently, kidney cancer. They publish annual program announcements that often include opportunities for new investigators. In addition, the DOD offers Career Development Awards in bladder cancer.

National Institute of Health (NIH) The NIH is made up of 27 different institutes and centers. The most significant for urologic research are the National Cancer Institute (NCI) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is the primary funding source of benign urologic disease research but other institutes, such as the National Institute on Aging also play a role. The NCI and NIDDK offer a variety of research awards. R01 is the primary individual investigator research award. These are highly competitive and require strong preliminary data. R21 is a pilot research funding mechanism that does not require preliminary data but is made stronger if it is included. The R21 is also quite competitive and is not available in all institutes. There are also funding

mechanisms for multi-investigator initiatives, center grants, and clinical studies. It is reasonable to say that NIH funding is really the province of the deeply committed investigator. The highly competitive nature of NIH funding has led to the development of Career Development (K) Awards to help young investigators become competitive for individual investigator awards. K awards can be obtained by application to the programs of the different institutes, K-programs awarded to and administered by NIH-funded clinical/translational research centers or K Scholar programs in Urologic Research awarded to a handful of Urology programs in the country. When it comes to looking into funding opportunities from the NIH there is one piece of advice commonly given and all too rarely taken: Talk to your program officer. All too often, the NIH is seen as a tight-fisted ogre that doesn't want to fund research. To the contrary, the NIH has as its highest priority the funding of the best scientific research proposals. The first step in achieving this goal is to help investigators identify the most suitable funding opportunities and to provide advice and direction in pursuing those opportunities. Talk to your research office and then talk to your program officer at the institute to which you expect to apply. They will welcome the opportunity to talk to you.

Grant Writing

A successful grant application requires both outstanding science and a superbly written proposal. Grant writing combines the art of persuasion with rigorous scientific thinking and is a skill that is challenging to learn and almost impossible to master. Even the most experienced and successful scientists have grants torn apart and rejected by a study section, so never underestimate the time, devotion, and hard work required to be successful. It is a learning process and you should take advantage of any relevant learning opportunity. The AUA is offering both online and in-person grant writing workshops; seek them out. Find a mentor who is willing and able to put a lot of time helping you think critically about your research and critiquing your grantsmanship.

There are some absolute essentials for any grant effort. The first is to get an example of a successful application for whatever kind of proposal you plan to write, study it and use it as a model for your own proposal. The second is to follow the directions from the program announcement to the letter. If it says in the announcement to describe how the data will be acquired and stored then you should have a small section that says exactly how the data will be collected and stored. Seriously. The third is to think about how much time it will take you to put together the proposal and realize that your estimate is way too optimistic. Most experienced grant writers will tell you that it takes them at least 9 months of hard work to produce a competitive proposal. Writing the proposal itself is relatively straightforward. It's thinking through the science, the planned studies, the analysis,

and the potential pitfalls and alternative strategies that take the time. Many experienced grant writers say that it can take 6 months to come up with an abstract and specific aims that jump off the page like the preview of a blockbuster movie. And, that is what it takes. If you haven't got the reviewers totally pumped by the time they finish reading your abstract, you will not get funded, it's really that simple.

Chung Lee, Ph.D. is a Professor Emeritus of Urology at Northwestern and an extremely accomplished grantsman. These are his rules for writing a successful grant application.

Rules for writing a successful grant application (Articulated by Dr. Chung Lee, Northwestern University)

All proposals must be hypothesis driven!
Come up with a hypothesis which is only one step ahead of the current state of knowledge—a statement that explains a mechanism in biology
Rationale: Present a series of indirect observations that substantiate the above statement, including work done by others and your preliminary work
Methods: Make a series of speculations and predictions of results, if the hypothesis is true, before describing what you want to do
Make sure all methodologies are sound and thorough. Avoid descriptive studies
Make disclaimers on issues that you cannot resolve before the reviewers catch them
Point out the wonderful aspects of your study explicitly. Otherwise, they may not be appreciated
In between sentences, show off your confidence, enthusiasm, honesty, and novelty

The Role of a Mentor

A young faculty member starting out in the world of research is a bit like a college kid painting the bedroom in his/her first apartment. The job will probably get done but it won't be pretty and won't be efficient. A good research mentor is like a professional painter who gives the kid advice: First spackle the holes and sand them smooth; then tape the molding, etc. Face it, you don't have all the time in the world (like a college kid does) to futz around. You need to be focused and efficient and nothing will help you achieve that like a seasoned mentor. A mentor does not have to have expertise in your specific area. Good, experienced mentors bring to the table a variety of skills that apply to a broad range of research. They will ask the hard questions that you need to face—upfront—before you go down an unproductive path. They will help you focus your interest; develop good, answerable research questions, push you to be self-critical and encourage you when you meet seemingly endless obstacles and disappointments. An exceptional mentor is one that makes your success a paramount consideration and does not seek any benefit or recognition from your work other than a thank you.

Time Management

Research takes time a lot of time. Bench and translational research are usually tedious and time-intensive for the principal investigator. No matter where you are in your career—whether a new investigator or an old hand—the fact is that a lot of your research-related work will be done on nights and weekends. That is just a fact. All the rest of your protected time, efficiency and any resources you can muster will never, ever change that. It will just make it possible for your work nights and weekends to put you "over the top."

Protected time is, generally, the province of the dedicated investigator—someone who plans to make research a centerpiece of their career. Protected time needs to be negotiated upfront. It may not need to be utilized immediately but a commitment from the department to support your research with protected research time when it is needed must be made before you start or you will never get it. The reality is that most departments are feeling a financial squeeze and need to maximize clinical income. If your department's expectations do not allow for enough research time, then you have 3 options. Revise your guaranteed salary downward in exchange for research time, significantly revise your career plan, or consider another institution. The worst thing you can do for your career is to embark on a research plan with insufficient time and resources. You will fail.

You only get one shot at being a young faculty member with a guaranteed salary and some degree of protection from overwhelming clinical and administrative responsibilities. So, make it count. Talk with people and get a very clear idea of what you want your career and practice/research time commitments to look like in 7 years. You should plan out every one of the first seven years of your career with a timeline of expected accomplishments. Be specific and be realistic. Having a plan and a roadmap is essential. As noted by the immortal Yogi Bera: "If you don't know where you're going, you might not get there."

Work to make your clinic as efficient and productive as possible. The most important thing for the success of a talented clinician-scientist is to run your practice like a business. Mimic the most successful practitioners. Develop a referral base for remunerative procedures that you enjoy. Check your billings to make sure they are billing properly for what you do. And, focus on getting the most done in the least amount of time. Constantly work at being a profitable business and it will leave more time for scholarly activities.

Work to become more efficient. Look at the successful senior members of your department. You'll find they get more done in a week than would seem humanly possible. They do this by being incredibly efficient. They weren't born this way they just worked at it over time. So should you. Do not get stuck in slow, inefficient work habits. Think like an industrial engineer—find a better, faster way to do everything. Talk to your senior department members, learn their secrets and imitate them. In the end, it really is a footrace. The more efficient you are the faster you can move and the more ground you can cover and still be home in time for dinner.

Protect your own time. If you do not, it will get eaten away and you will get eaten alive. The clinical need is never-ending, and it is so easy to get pulled in. No one else is going to watch out for your time so you need to watch out for yourself. Obviously, patients always come first, and you never should say no to an unmet need. Many times, however, the attraction of being called on, of being needed and the good feeling that comes with making a difference entices a dereliction of your research activities. Do not let it happen. Decide up front how important research is to you and, if it is a priority, then be true to that priority. If with time you decide that your heart is in the clinic and the OR, then it is quite reasonable to amend the career plan, your priorities, and your time commitments.

Chapter 6
Academic Roles: Inventor

Ryan L. Steinberg, Brett A. Johnson and Jeffrey A. Cadeddu

Introduction

Academic urologists must balance a multitude of roles as part of their work, including but not limited to clinician, partner, educator, researcher and mentor. In fulfilling these roles, many will identify a need for new technology or areas of improvement for existing technology. For the motivated urologist, this provides the groundwork to pursue the development of new devices or improve currently available technology. Furthermore, as many academic medical centers are often associated with a university or undergraduate/graduate college this allows them to facilitate necessary collaborative relationships with engineers, scientists, and business people. In this chapter, we aim to highlight the process to inventorship and share thoughts, advice and common pitfalls of the process.

Identify the Need

The fundamental notion of any invention is first identifying a need for the product. In some cases, this is straightforward. For example, people who previously underwent transurethral resection of the prostate (TURP) using monopolar loop cautery were at risk of developing TURP syndrome (hyponatremia) due to intravascular absorption of free water. The need was clear: avoid a common and possibly fatal complication of surgery. The bipolar resectoscope was thus developed which utilized saline in place of water, negating the possibility of TURP syndrome. While this is rather obvious, not all inventions must be so. Improvements in surgical

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_6

equipment ergonomics, measurement methodology, and others can have large impacts on those who use the products. Identifying the need is the first step.

There are many obstacles in pursuit of advancement due to one of a number of factors, including time, financial ability, or the belief that others are already addressing this need. In a TEDx talk entitled "A tool to fix one of the most dangerous moments in surgery", Nikolai Begg, a biomedical engineering graduate student, discusses his design for the Veress needle to make insufflating the abdomen at the beginning of laparoscopic surgeries safer [1]. Begg negates the assumption that all major problems are actively being addressed by a panel of experts, urges those with an idea to allow it to captivate them, and encourages pursuit of a solution with great zeal. He could not be more correct.

Device Conceptualization

After identifying the need, possible solutions must be considered. This can be one of, if not the, most difficult aspects of inventorship, as it sets the stage for all other progress. Sometimes, simple modifications to existing products can drastically improve their function. Other times, a completely new ideology is needed. Before beginning an endeavor to re-invent the wheel, a thorough search of what is commercially available can help to identify what has already been produced (occasionally, devices/equipment may be available but not purchased by the institution) and may spur ideas for new or redesigned devices. Next, an internet-based patent search and review of the available literature via PubMed, Google Scholar, and other such websites should be undertaken.

After familiarizing yourself with what has already been investigated and reported, a written list considering all means to accomplishing your goal should be created. It is imperative to exclude no idea, even if you don't think it will work. In creating this list, a review (or rapid education) in certain scientific principles/technologies may be required. For example, when considering measuring liquid flow, there are many a multitude of ways to do so, including mechanical (e.g., turbine rotations), pressure-based (e.g., pitot tube), optical-based (e.g., optical flow meter), imaging-based (e.g., sonar flow meter), etc. After creating the list, a critical appraisal of the constraints of the need (e.g., size/dimensions) should be considered. This will often eliminate some of the ideas generated. The inventor will then need to select a concept with which to model or pursue for prototype production.

Depending on the institution and desires of the academic urologist, inclusion of graduate students, engineering professors, medical students, residents and fellows in the process of conceptualization can be incredibly helpful. Many of these individuals will have prior life experiences (e.g., college degrees in engineering, working in industry, knowledge of regulatory processes) that can be beneficial. Involvement in these types of activities can also be exciting for the trainee, as well as beneficial to his/her resume and spurn an interest in urology and/or device development.

Modeling

When considering computer modeling, it is important to distinguish between the use of this term in reference to a virtual design or in reference to a simulation in which the design is manipulated. Computer-aided design (CAD) can improve the accuracy (reduce human error) in developing plans for a prototype, as well as facilitate faster design modifications. There are now a multitude of software options to generate CAD drawings with one of the most recognized being AutoCAD® (San Rafael, CA, USA). Depending on the means of manufacturing (e.g., 3D printed parts, etc.), CAD may also be advantageous in preparation for computer-assisted manufacturing (CAM). Though, limitations of CAD include the cost of the software (though there are free tools available) and cost (both time and monetary) to learn how to use the software.

Computer simulation aims to create variations in the environment or on the virtual design itself. This allows engineers to better understand failure methods of the device. Computer simulation has shown the ability to expedite testing (e.g., failure testing), reduce costs, and avoid unethical experiments. Medical device evaluation historically has included laboratory, animal and human data. As of 2015, the Food and Drug Administration (FDA) noted a desire not for more total data with the inclusion of computer simulation data but the use of this data to create less reliance on animal and human data [2]. Since that time, the FDA has issued a guidance statement on reporting of computational modeling studies [3]. With the advances in computer simulation now possible, some inventors advocate the use of early computer simulation to aid in prototype development (e.g., guide material selection based on simulated device stress/strain evaluation). The decision to proceed with early simulation is inventor dependent and project specific.

Prototype

Prototyping is one of the more complex aspects of device development and requires expertise typically outside the realm of the urologist. This process has historically required the expertise of a broad range of engineering fields including mechanical, electrical, materials science, biomedical, supply chain, and computer science. Though, the landscape of prototyping has changed drastically over the past decade with a number of new and readily available technologies.

First, the advent of inexpensive 3-dimensional (3D) printing (a microwave sized machine can cost only a few hundred dollars), which can utilize several different filament materials (raw materials) with unique properties to create parts of a device, has allowed for the rapid and low-cost prototype creation. The National Institute of Health (NIH) has a repository of biomedical CAD files available for free (https://3dprint.nih.gov/). Other advances include inexpensive (~$20–$40), yet robust single board computers (e.g., Raspberry Pi (Raspberry Pi Foundation,

Cambridge United Kingdom) and Arduino (open source)), which can be programmed, modified, and updated with ease to perform computation, sensor input/output, or electronic actuation. Further, simplified, user friendly software to assist in CAD, 3D-printing, and single board computers has made these processes accessible to those without expertise in computer programming.

The typical prototyping process starts with a Proof-of-Concept (PoC) device. The PoC serves to verify the key functional aspects of the device without effort given to ease-of-use or aesthetics. PoCs are often "over-engineered," meaning that more versatile materials are used which allow testing to be done at various levels of sensitivity and complexity. If the device works well with less precision, less costly components can be used for the massed produced product.

Next, a Working Prototype (WP) is produced that uses similar engineering/technology and replicated all functionality as would be incorporated into a final device. Typically, the WP is used to test the device in a clinical environment and allow further technical refinements based on experimentation results. A Visual Prototype (or "Mock-up") resembles the dimensions, appearance, and aesthetics of the final product and would follow a WP. The final stage before mass production is a Functional Prototype. This is essentially the final product and represents the appearance and function of the market-ready production device.

Testing

Device testing is critical for several reasons. Initially, the Proof-of-Concept prototype must demonstrate that the science and engineering behind the device work. Additional investigation establishes safety, reliability and reproducibility and the device. Ultimately, scientifically rigorous studies are needed to establish that the device is superior to (or at least equivalent to) the current standard of care. Additionally, testing is done to determine the precision required for the components of the device. This allows the device to be mass-produced at a reasonable unit cost.

As it would be unethical to directly use novel devices on patients, prototypes must first establish safety and efficacy in a study model. Models come in different forms and are made to suit the stage of development. Initial testing is often performed *in vitro* (in the lab) with simple materials with tissue-mimicking properties. Silicone, basic organic material (e.g., fruits or vegetables), and more advanced, 3D printed biomimetic materials can all be used to simulate tissues. The goal of initial testing is to demonstrate device safety and reliability and often requires several design modifications to be made.

Later stages of development require more sophisticated models. Deceased animal organs (e.g., porcine or bovine kidneys and bladders) can often be obtained for relatively low cost and without the need of prior approval. Likewise, the cadaveric model is a critical tool for testing and development of medical devices. Fresh tissue cadavers offer an excellent anatomical model while not requiring

Institutional Review Board (IRB) approval. The drawback is the cost of the model can range from several hundred to a few thousand dollars depending on the location, institution, and tissue needs.

In vivo testing is often initially accomplished with living animal models. Small mammal, canine, or porcine models tend to be the most commonly used. Mammalian models often require approval from Institutional Animal Care and Use Committee (IACUC). Protocols involving animal testing have to be well-designed and well-described before starting any testing. While renal anatomy is well modeled in the animal model, canine and porcine urethras are not similar to humans and often present a challenge to models that require transurethral access.

The final stage of testing requires human subjects. Protocols involving patients or healthy volunteers require strict approval by the IRB, require patient consent, and registration of the study with ClinicalTrials.gov. In some cases of negligible risk of harm, informed consent can be waived. Rigorous testing protocols should be designed to compare the device against the standard of care. The designer of the protocol must give thought to powering the study appropriately, proper randomization, and an appropriate control. The goal of the investigation is to determine device safety (Phase I), works consistently across different testing environments (Phase II), and determine how the device compares to current standard of care (Phase III).

Funding

The process of designing, prototyping and testing a novel device can be incredibly expensive. Funding such projects is critical to their success. The United States spent approximately $450 billion on research and development in 2013, 71% of which came from the private sector [4]. The source of research funding can be broken down into public or private funds. The National Institutes of Health (NIH) is the largest public funder of biomedical research in the world. The NIH awards grants to fund medical research according to a peer-reviewed process. There are several types of awards. The most common is an R01 which is used to support a discrete, specified, research project. A K-award is designed for career development of scientists early in their career. Congressional appropriation for the NIH has decreased in the past decade and R01-equivalent grants are extremely competitive. In general, NIH grants are not used to commercialize product, but rather contribute to the body of science in the community.

An additional source of public funding that is often a better approach to medical device funding than an R01 is a Small Business Innovation Research (SBIR) grant. These awards are intended to help small businesses conduct research and development. These grants seek to contribute to the development of a specific product with potential for commercialization. The SBIR grant was created to fund early-stage innovation for possibly industry-changing ideas that are too high-risk for private investors. The SBIR programs are tiered with the first phase awarding

$150,000 for initial exploration of feasibility. More information can be found at www.SBIR.gov.

Private funding sources can likewise be used to support the development of medical research. Some academic institutions have endowments to support certain types of research. Private funding for researchers also can also come from philanthropists, crowd-funding, private medical or device companies, nonprofit foundations, or professional organizations like the American Urology Association. Declaring the source of funding as well as any possible conflicts of interest is critical in the process of scientific discovery.

Intellectual Property Protection

One of the most important aspects of inventorship is protection of intellectual property. This point cannot be understated. The easiest way to begin protecting your property is to keep a timestamped (date and time) paper trail (be it actual paper or electronic documents/art), regardless of the simplicity, poor grammar or bad artistic skills. We recommend keeping a bound journal or notebook to record ideas, thoughts, schematics, technical drawings and anything related to your idea/invention. Some recommend numbering the pages sequentially, not skipping pages, initialing the entries, and having witnesses to your records. These added steps can confirm the validity of your documentation but also can be laborious. These records of your developmental process are a great way to stay organized and in the case of a dispute regarding the legal inventor, can provide proof of the invention date.

The United States Patent and Trademark Office (USPTO) offers multiple types of protections including trademark, copyright, service mark, and patent within the US only. The definition of each is specified in Table 6.1. It is important to appreciate the differences between these options to ensure that you are obtaining the correct protection. With inventorship, most will ultimately decide to pursue a patent, specifically a utility patent. It is also important to understand that a separate international patent must be applied for if protections are to extend to countries outside of the US. It should be stressed that the available options offer protection of an invention, not simply an idea. In most circumstances, an idea will evolve into sufficient detail regarding how to accomplish the desired endpoint (fulfilling the previously identified need) which would constitute an invention [5]. It is important to consider this prior to pursuing a patent.

Prior to filing a patent, there are a number of important considerations. First and foremost: Is the idea mine? Gattari provides a thorough list on whom would not be considered an inventor, including someone who contributes to the device but only an obvious element [5]. After confirming that the idea is your own, a thorough patent search should be undertaken as patent applications can cost $5,000–$10,000 excluding patent attorney fees. This can be performed online either on the

Table 6.1 Definitions of common types of protections offered by the US patent and trademark office

Types of protection	Definition
Trademark	A word, phrase, symbol, and/or design that identifies and distinguishes the source of the goods of one party from those of others
Service mark	A word, phrase, symbol, and/or design that identifies and distinguishes the source of a service rather than goods. Some examples include: brand names, slogans, and logos
Patent	A limited duration property right relating to an invention, granted by the United States Patent and Trademark Office in exchange for public disclosure of the invention. Patentable materials include machines, manufactured articles, industrial processes, and chemical compositions
Copyright	Protects original works of authorship including literary, dramatic, musical, and artistic works, such as poetry, novels, movies, songs, computer software, and architecture

Source https://www.uspto.gov/trademarks-getting-started/trademark-basics/trademark-patent-or-copyright

USPTO website, a patent database site, or Google Patents. A common pitfall is to assume that if the device/product is not on the market then it is not patented. It is not uncommon for devices to be patented but never come to market. This can be as a result of difficulties during testing, obtaining FDA approval or purchasing of patents by companies to limit market competition.

When pursuing patent protection, inventors have 2 choices. They can file for a provisional patent application or a full patent. A provisional application allows an inventor to establish an earlier official filing date for a patent, assuming that a full patent application is submitted. A provisional application has a life of 1 year. If a full patent is not filed at the end of a provisional application, the early filing date is negated. Thus, if a full patent is to be pursued, a provisional application can help provide a year of protection to continue development and perform testing in support of a full patent application. A fully executed utility patent has a life of 15 years from the date of issuance. As of June 2018, the average time from utility patent application filing to final disposition (patent issued or abandonment) is currently estimated to be 24.3 months with a backlog of ~527,000 unexamined applications [6]. During this time, amendments can be made to the application; therefore, it is critical to continue development and testing during this time. The added data can only strengthen an application.

In your patent application, the goal of the invention claims is to demonstrate that your device is useful, novel, and non-obvious. These are critical words to consider when filing as each needs to be fulfilled for a patent to be issued. The USPTO offers an "Inventors Assistance Center" through the www.uspto.gov website which can be helpful in assessing if your device meets these criteria. Though, in our experience, a knowledgeable patent attorney can be extremely helpful in these circumstances.

A common question that is asked is when an inventor should approach industry with their idea/invention. While a well-documented notebook provides the time of idea inception and development, we advise a conservative strategy when discussing any ideas or devices with industry. We suggest some form of patent application be filed prior to any meeting in which intellectual property will be discussed. We caution inventors about opening dialogue with industry under a provisional application unless the filing of a full patent is a guarantee given that the advanced filing date protection will lapse after only 1 year.

FDA Approval

The Food and Drug Administration, a federal agency within the United States Department of Health and Human Services, is responsible for the protection of public health by overseeing the production of pharmaceutical drugs and medical devices (among other things). Not all devices require approval by the FDA, but for those that do there are two regulatory pathways. The far most common is the 510(k) process. In this pathway, the manufacturer submits a Premarket Notification to the FDA to demonstrate the device is as safe and effective as an existing FDA-approved device on the market. The other pathway is Premarket Approval (PMA), and it is much more rigorous than 510(k) pathway and is for devices that do not have a comparable device already on the market. The device manufacturer submits information about how the device is designed and manufactured as well as clinical trials demonstrating its safety and efficacy. The 510(k) process is much more cost effective and 99% of new devices use this pathway.

The FDA classifies medical devices into three categories. A Class I device has low to moderate risk to the patient. About half of all medical devices fall within this category. Most devices in this category are exempt from regulation and premarket notification or approval are not required. The manufacturer is required to register with the FDA and report any adverse outcomes. Examples of Class 1 devices are examination gloves, bandages, basic surgical instruments. A Class II device has moderate to high risk to the patient. These devices (with a few exceptions) require Premarket Notification or Approval as well as post-market surveillance. These devices are held to a higher level of assurance than Class I device. Examples of Class II devices include surgical drapes, infusion pumps, ureteral stents, and ureteroscopes. Class III devices either have significant risk or there is insufficient information to accurately determine risk. These devices require Premarket Approval and extensive premarket investigation. Examples of such devices are implantable devices, defibrillators, HIV tests, and ureteral bulking agents. Most new devices fall within the first two classes and follow the 510(k) processes.

When studying a novel medical device prior to any premarket action with the FDA, an investigational device exemption (IDE) allows the device to be used in clinical study with the goal of collecting safety and effectiveness data. Unless

the device is exempt from premarket approval, devices must seek an IDE prior to study. The study must be approved by the local IRB, and if there is significant risk to patients, the FDA must also review the investigation plan. Informed consent, proper labeling (investigational use only) and close monitoring are required for an IDE to be approved. More information can be found at: https://www.fda.gov/MedicalDevices/.

Take Home lPoints

- Identify where there is a need and consider ways to address the problem
- Keep a log of ideas/developments and limit discussion early on to help protect your ideas
- Prototyping has become more rapidly and less-costly than in years past due to new technologies
- Start testing on simple models (*in vitro*) and proceed to more complex ones if results appear promising
- Multi-disciplinary collaboration is often a critical component of achieving success when developing a device.

Compliance with Ethical Requirement

Ryan L. Steinberg, Brett A. Johnson, and Jeffrey A. Cadeddu declare that they have no conflict of interest.

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Chapter 7
Academic Research Collaboration

Kristina L. Penniston

Introduction

Year after year science provides more answers to problems, some of which were not even imagined a short time ago. Yet these answers raise an ever-increasing number of new questions. The more we know, it seems the more there is to know. The considerable gains in science and health knowledge in recent decades have given way in the twenty-first century to larger and more complex questions and new fields of inquiry: quantum biology, synthetic biology, microbiomics, genomics, metabanomics, nutrigenomics, exposomics, and so on. New approaches to health and biomedical science—"big data," population health, translational science, artificial intelligence, machine learning—have emerged. As basic scientists and clinician scientists delve ever deeper in an effort to answer these questions, and with higher demand for research findings to flow more quickly into clinical and community settings, investigators are increasingly driven to join together to share resources and pool their unique interdisciplinary expertise [1], taking the form of intra- and extramural as well as intra- and inter-institutional collaborations. Opportunities promoted by large funding agencies reflect this higher complexity of scientific inquiry and are driving the move toward scientific collaboration and "team science" [2, 3].

The number of multiple principal investigator (PI) grants funded by the National Institutes of Health (NIH) has risen over time, growing from only 3 in 2006 (its first year of multiple-PI grants) to 1,098 in 2013 [3]. Institutes within

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_7

the NIH now offer an ever-growing number of program project and cooperative agreement grant opportunities. For example, initially funded in 1994 through a grant mechanism, the multicenter Breast Cancer Surveillance Consortium is now a program project grant that received $17 million in a 2017 renewal award from the National Cancer Institute. The National Science Foundation (NSF) and other federal funding agencies have an even longer history of collaborative science models [3, 4]. The NSF began funding program grants >20 years earlier than did the NIH. While beginning with just one in 1985, in 2011 the NSF invested nearly $300 million in multiple center programs [4].

My initial experiences with collaboration occurred as a graduate student. I had both good and bad experiences. I knew little if anything about developing and sustaining collaborative research relationships at the time; there were no courses in my undergraduate or graduate curricula addressing the topic, and I had done no research on my own about entering into and managing research collaborations. While the outcome of each collaboration was similar, the lessons I learned from each were different. In my role as a staff scientist in an academic urology department, I have developed multiple fruitful collaborative relationships, applying lessons learned along the way. The purpose of this chapter is to offer key lessons in collaboration, based on both the relevant literature and my experiences. I will not exhaustively review the theory or practice of research collaboration as the literature is replete with such. Nor is this chapter intended to serve as a "how to" primer on building or sustaining a successful academic collaboration. Many others are more suited for that task than I. Rather, the goal of this chapter is to: (1) provide a context and rationale for academic research collaborations; (2) identify critical features of successful collaborators and collaborations; (3) highlight some of the benefits and challenges of collaboration; and (4) share key lessons learned and "best practices" from my own experiences as a collaborator in both the clinical and research settings.

Definitions, Rationale, and Features of Academic Collaboration

Definitions of collaboration. Merriam-Webster defines collaboration generally as "working jointly with others or together especially in an intellectual endeavor." There are many definitions that specifically describe academic collaborations (Table 7.1). Most interject some unique thought or aspect of collaborating. But there are common themes, including shared learning, endeavoring to create new knowledge (i.e., knowledge that would not be gained without the collaboration), complementary skills and expertise, coordinated resources, and shared responsibility. As collaborations develop across numerous disciplines, including biological science, social science, environmental science, physical science, and medical science, it makes sense that each would be defined according to the unique needs

Table 7.1 Definitions of collaboration. The term "collaboration" has multiple meanings. The table lists several definitions for "collaboration" consistent with academic research and/or clinical cooperative relationships that are centered around common goals and mission

First author	Definitions
Denbo (2017) [24]	A means to producing knowledge that would otherwise never happen; sharing ideas with someone who focuses on another aspect of a subject, who knows related literature better, or who has expertise in another domain of knowledge altogether, enabling work that would otherwise be impossible
Schöttle (2014) [25]	Interorganizational relationship with a common vision to create a common project organization with a commonly defined structure and a new and jointly developed project culture, based on trust and transparency; with the goal to jointly solve problems mutually through interactive processes, which are planned together, and by sharing responsibilities, risk, and rewards among the key participants
Bozeman (2013) [26]	Social processes whereby human beings pool their human capital for the objective of producing knowledge; a bringing together of talents for the purpose of knowledge creation and usually resulting in an identifiable knowledge product (e.g., scientific paper, patent, improved base of knowledge, enhanced academic reputation)
Bennett and Gadlin (2012) [7]	A group that is led by one or more scientists and is composed of researchers with diverse backgrounds and different areas of expertise and in which the collaborators will have developed common objectives, coordinated their resources, and composed a shared agenda of activities directed toward achieving those objectives
Baldwin and Chang (2007) [27], Bronstein (2003) [28]	An effective interpersonal process that facilitates the achievement of goals that cannot be reached when individual professionals act on their own, the rationale for which includes: increasing prestige or influence; sharing resources and reducing costs; and/or facilitating learning
Dillenbourg (1999) [29]	A situation in which two or more people learn or attempt to learn something together; joint problem solving
Hardin (1998) [30]	The process of shared creation: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own. Collaboration creates a shared meaning about a process, a product, or an event
Macrina (1995) [31]	Diverse partnerships between intra- or extramural investigative entities that are formed when researchers wish to take their research programs in new directions with goals of advancing knowledge enriching processes, and developing new products and outcomes

(continued)

Table 7.1 (continued)

First author	Definitions
Roschelle and Teasley (1995) [32]	Coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem; the mutual engagement of participants in a coordinated effort to solve a problem together
Mattessich and Monsey (1992) [33]	A process that brings previously separated organizations (or individuals) into a new structure with full commitment to a common mission
Wood and Gray (1991) [34]	Collaboration occurs when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain
Appley and Winder (1977) [35]	A relational system in which (1) individuals in a group share mutual aspirations and a common conceptual framework; (2) the interactions among individuals are characterized by "justice and fairness;" and (3) these aspirations and conceptualizations are characterized by each individual's consciousness of his/her motives toward the other; by caring or concern for the other; and by commitment to work with the other over time provided that this commitment is a matter of choice
Meadows (1974) [36]	Collaboration is a concrete form of readily observable networking wherein researchers work together on research project—designing it and/or undertaking the project together and publishing its results—to influence research funding and/or performance systems

and context of each collaboration. Some collaborations may work best when collaborators are equal partners who are pursuing mutually interesting and beneficial research. But collaborations may also involve researchers of differing stature, funding status, and types of organizations. As each collaboration involves different collaborators and serves a unique purpose, each is uniquely assembled and defined.

Rationale for collaboration. Scientific collaboration has long been promoted. In 1969, Donald T. Campbell, a social scientist and proponent of a collaborative method of public policy that would use interdisciplinary experimentation and data as a guide for decision-making, proposed a collaborative model of science, suggesting that science is most effective when researchers with expert knowledge in different areas collaborate on a project of overlapping interest [5]. The overlap allows for common ground, he reasoned, while the respective areas of expertise cover a greater "surface area" of the possible knowledge brought to bear on a specific question [6]. As scientific research has become more complex, universities and other research organizations have created innovative infrastructure to promote interactions, including open laboratory spaces, shared "core" equipment and resources, and public "interactions" areas [7]. Collaborative science increasingly

transcends university boundaries. Indeed, in recent years, multi-university collaborations have been the fastest growing type of authorship structure [8].

Not all science requires collaboration. But, given the increasing complexity of the healthcare system and patient conditions, and given the more specialized knowledge and resources required in biomedical and translational research aimed at understanding and managing them, collaboration is appropriate. In their "field guide" to collaboration and "team science," Bennett et al. note the increasing "complexity of today's most pressing health issues and diseases" as requiring collaborations among scientists from different fields and trained in different research methods [9]. The case highlighted in the **sidebar** offers a good example of how, when a particular research problem, aim, or mission is substantial and large enough to be subdivided into different research directions, collaboration allows for these different directions to be pursued and then tied together to form a broader yet cohesive picture of the problem.

Urinary Stones Collaboration

Decades of research in urinary calcium oxalate stone disease have led to the widespread consensus that it is even more complex than many previously believed, with multiple etiologic factors and variable expression between affected individuals. In many ways, there are now more questions about calcium oxalate stone formation and growth than ever before.

New collaborative efforts to better understand how calcium oxalate stones grow—involving nephrologists and urologists as well as geological scientists and molecular biologists—have revealed novel insights about the crystalline architecture and chemistry of calcium oxalate stones [10]. These new findings may lead to new therapeutic targets for managing and preventing stones and would not have been possible without bringing investigators from different fields together.

Though saying little about the quality of the collaboration on outcomes such as academic culture and functioning or on training and mentoring, research collaborations are often measured through co-authorships of research papers. Indeed, as with changing funding patterns, the growth in collaborative science appears to be reflected in author lists on scientific papers. For example, between 1981 and 2001, the average number of co-authors on a publication in the Proceedings of the National Academy of Sciences USA rose from 3.9 to 8.4 [11]. From 2013 to 2018, the number of papers in the Nature Index with more than a thousand authors surged from zero to 100 [12]. Other metrics further illustrate the rise in the number of authors and teams in publications (Fig. 7.1).

Features of successful collaborations. The first ingredient in a successful collaboration is good collaborators. Individuals with shared goals and a cooperative spirit are good candidates. Ideal collaborators are individuals who (1) share characteristics of teams and groups, (2) recognize and value each other's unique expertise while maintaining a certain independence, (3) jointly agree upon common goals

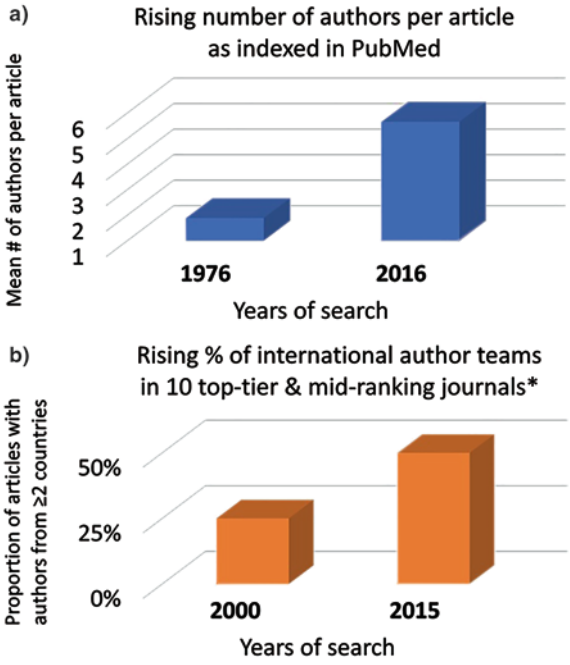

Fig. 7.1 Trends in number of authors (**a**) and percentage of international teams of authors on peer-reviewed scientific publications (**b**). Data for the figures were adapted from references 23 and 38, respectively. * Of the 10 journals reviewed, the 6 top-tier journals were: JAMA, Lancet, the New England Journal of Medicine, Cell, Nature, and Science; the 4 mid-ranking journals were: British Medical Journal, JAMA Internal Medicine, Journal of Cell Science, and FASEB Journal

and implement them through mutual support, (4) build trust leading to open and honest dialogue, (5) recognize conflict is normal, and (6) jointly participate in decisions [13]. A fully developed collaboration requires shared thinking and problem-solving such that participants are able to define the problem, understand the expertise that each member brings to the team, agree on what the gaps in current knowledge are and on goals to address those gaps, and share responsibility to monitor progress in achieving the goals of the collaboration [14]. Accountability to each other, based on developing interdependence (acknowledging that outcomes are contingent upon the actions of another) [15] and trust, forming the basis for cooperative behavior among individuals, are additional factors. Trust can lead to cooperative behavior among individuals [16]. Communication and interaction are central to trust building [13]. Communication is most effective when collaborators work out in advance a "shared language," particularly when they are from different

fields [7]. Finally, the focus of the partnership revolves around shared objectives, not issues of power. When power structures are ignored, the possibility of having more open communication is increased, and the road is opened to build consensus on objectives [17]. These and other features of collaborations are summarized (Fig. 7.2).

Benefits and Challenges of Collaboration

Benefits of collaborations. Successful collaborations create new knowledge and new insights. Collaborations have other benefits as well. Whether across laboratories in a single program or department or across different scientific or medical disciplines, data show higher productivity when basic and clinical research are done collaboratively [18]. Having connections to different groups increases heterogeneity of ideas and activities, and the breadth of these ties has been shown to predict innovation and creativity [19]. Collaborative relationships can also be a means of acquiring social capital and are therefore appropriate when that is the goal. Social capital is linked with academic success, including tenure [20], and career advancement. Social capital also directly aids the clinical process [21], improving patient care and satisfaction and also potentially enhancing the ability of clinical investigators to incorporate research into their work, contributing to a learning healthcare system and generating data to drive evidence-based practice. In other cases, collaborations provide opportunities for collaborators that they would not otherwise have. For example, some senior faculty enjoy working with postdoctoral fellows and junior faculty in an effort to help them advance their careers or meet academic research goals. A desire to mentor students and faculty is a major motivation for some senior collaborators. Other benefits to individual collaborators include a feeling of contributing to something larger, the results of which potentially have greater significance compared to what each person could realize alone; opportunity to acquire new skills; and networking, which could lead to career advancement. Being able to work effectively with professionals from many different backgrounds can be a very marketable skill.

Challenges of collaborations. Although collaboration is increasingly encouraged in the academic setting, little formal training to develop these skills is available. As a result, many of us initiate collaborations without appropriate planning. Collaborations are not always easy to initiate or carry out. They can be cumbersome. At times it may feel that more work is created. They may require uncomfortable discussions, such as about the productivity of individuals within the collaboration, funding, and authorship, and can lead to uncomfortable interactions. Putting together a collaboration with the most appropriate individuals may mean working with someone you don't know and/or whose methods are different than yours. Collaborators may have different work styles, which may contribute to questions or suspicions about commitment, work ethic, or output. The timescale

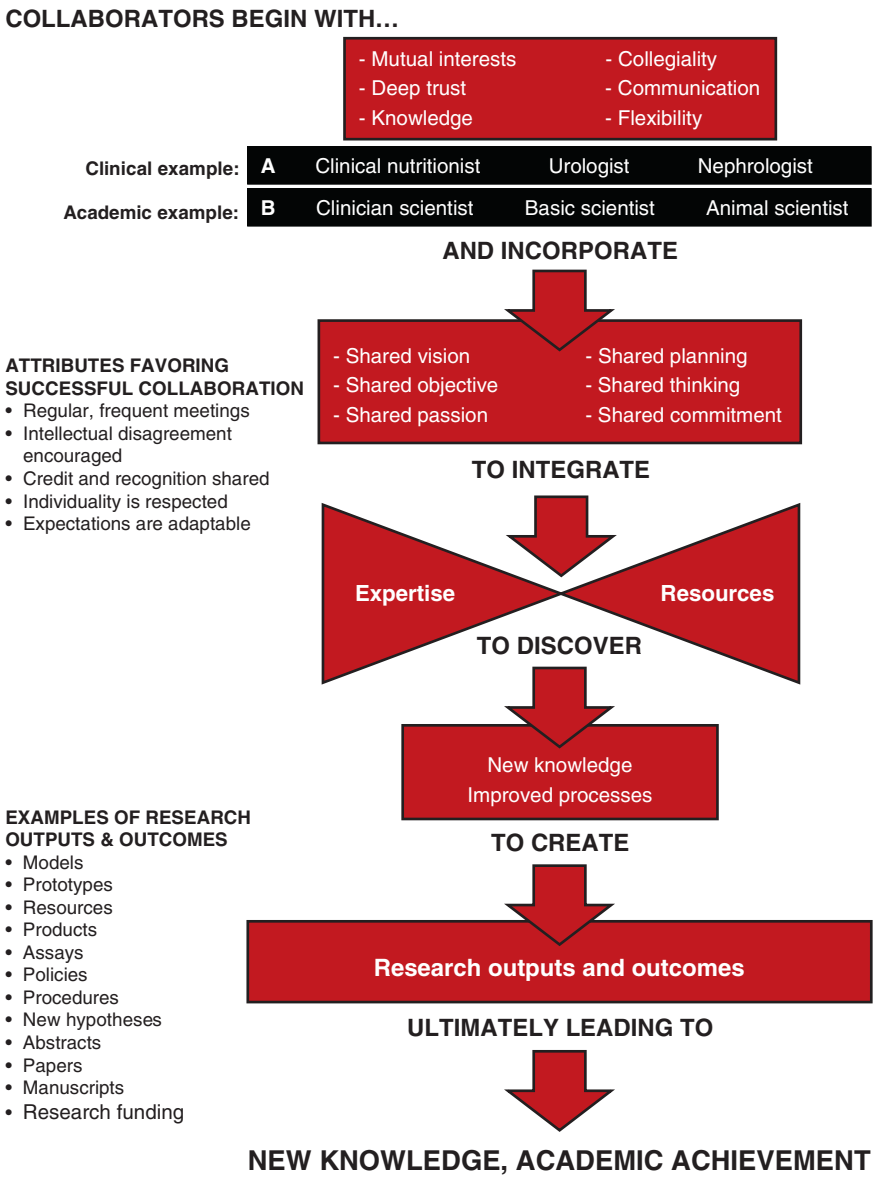

Fig. 7.2 Model for academic collaboration (adapted from the model described and illustrated by Montiel-Overall in Ref. [13]). As collaborators come together with trust, collegiality, and with shared academic or research interests, they develop shared objectives to be accomplished in the collaboration. As the work to be undertaken is planned and subdivided, each collaborator uses his/her unique expertise to complete his/her part. When all parts are combined, new knowledge and/or other outputs are created that could not otherwise have been created individually

for research may be longer than for a single-PI or unidisciplinary project as the more people that are involved, the more time must be taken to bring people together, to meet, to plan, and to compile and interpret results. Strong collaborations may require strong leadership, at least with respect to organization, planning, communication, and conflict resolution. In its excellent policy report on collaborative academic research ("team science"), the United Kingdom's Academy of Medical Sciences found that "academic reward and recognition systems have failed to match the growth of team working," acknowledging the long-held tradition of individual scholarship within academia, which emphasizes independence [22]. Indeed, the lack of recognition for one's contributions within a collaborative research team was cited as a major impediment to researchers, especially those in early career settings, considering participation. Other challenges associated with research collaborations are summarized in the **sidebar**.

Potential Challenges in "Team Science" [23]

- Identifying the optimal group of investigators to address the questions of interest
- Addressing issues of heterogeneity in combining data
- Ensuring engagement, participation, and oversight of all collaborators
- Agreeing on how to present and interpret results
- Ensuring that all are appropriately recognized for their contributions

My Experiences with Collaboration

My graduate school training, initiated after earning my credentials as a registered dietitian nutritionist (RDN), was conventional in the sense that the goal was to become an independent investigator. My research was a combination of basic and applied science and involved the use of animal models in retinoid assessment methodology. Near the end of the Ph.D. process, I was strongly steered toward a postdoc within my field of study and was offered to consider one at another institution. But by that time I had accumulated nearly 6 years of experience as a RDN, accomplished by negotiating with my professor to excuse me from the bench for four hours each week so that I could work at the University Hospital as part of the multidisciplinary clinical team in the Metabolic Stone Clinic. During those years, I experienced first-hand the rise in the stone clinic's visibility within the region. Patient referrals were increasing, and an endourology fellowship with a strong emphasis in metabolic stone disease and offering training in clinical management and research was established and on its fourth fellow. Though created by a urologist and housed in a urology clinic, the Stone Clinic was staffed by two senior nephrologists (Dr. Richard Rieselbach and Dr. Thomas Steele) with a special

interest in kidney stones. Their knowledge and willingness to pass it along to me formed an early foundation in my understanding of stone disease.

Against this backdrop, thanks to the hard work of a cadre of clinician and basic scientists who contributed to a rapidly increasing body of literature beginning in the 1980s and continuing through the 2000s, much was learned about the role of diet and stones. Indeed, using the search terms "diet" and "urolithiasis," the number of PubMed-indexed publications from 1946 to 2018 related to the role of nutritional factors in kidney stones increased from a mean of 4/year to nearly 70/year (Fig. 7.3). It was within this context that clinical nutrition therapy as part of the medical management of stones was considered a critical and indispensable attribute of our stone clinic and, as such, required the specialized skills of a dedicated RDN (clinical nutrition FTE from the hospital's clinical nutrition service was provided from the inception of the UW Health Metabolic Stone Clinic in 1995). It was also within this context that a role for clinical nutrition research in stone prevention became more visible. By the time I completed my Ph.D. and was offered a scientist position within urology, I saw the translatable potential of the study of nutrition and its effects on stone formation and growth and realized that I wanted to be part of contributing to that science.

Developing a collaborative mindset. Having rejected the traditional Ph.D. path of independent investigator heading up a laboratory and having chosen an "allied" (vs. primary) clinical specialty, I was in a collaborative setting. From the beginning of my academic career, I was fortunate that Dr. Stephen Nakada, then a division chief and now department chair, fostered a collaborative working association instead of the more traditional "employer-employee" relationship. Because of my knowledge and training in nutrition, and because I had demonstrated for several

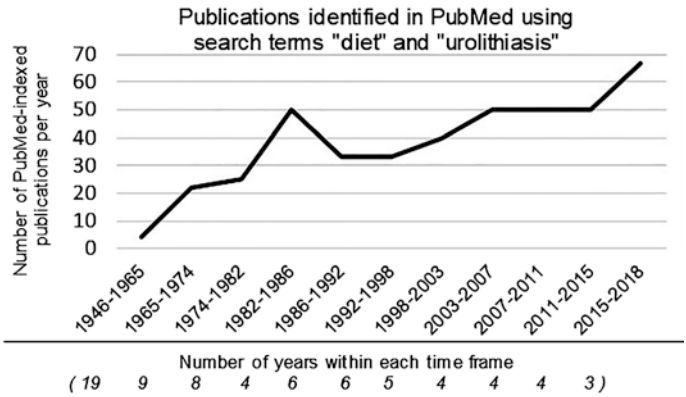

Fig. 7.3 Rise in number of PubMed-indexed publications related to "diet" and "urolithiasis." Data show mean number of publications per year (y-axis) within time frames shown on x-axis. Search results were not filtered in any way; some publications are reports of clinical studies while others are mechanistic, some of which were animal or *in vitro* studies. Note that the time frames are not equally distributed

years a passion for the nutritional management of patients with stones, he invited me to contribute as much as I wanted toward the development of a clinical stone research program within the department. Being valued for what I could "bring to the table" played a foundational role in developing the collaborative mindset I would need in finding a place for myself in urology and for looking for ways to make meaningful contributions. Perhaps equally as critical was the willingness among my urology colleagues to accept my contributions and ideas as important. The research program we developed has provided significant research opportunities and unique experiences to numerous endourology fellows, a number of interesting research findings, and advances in the way patients in our stone clinic are managed.

My collaborative experiences. I have enjoyed collaborative relationships with several individuals over time and have learned many lessons. During graduate school, I wanted my dissertation to include at least one human clinical study, and my professor was supportive. So I reached out to an MD—extremely well-known in his field—with a very active and stellar research program. He was executing a number of studies and collecting clinical samples that, I proposed, I could use to test a hypothesis related to vitamin A. He agreed, and we conducted the intervention I proposed. This was my first exposure to a clinical study, and, as per our agreement, I relied heavily on the clinical research infrastructure he had built over time for everything having to do with human subjects protections, enrollment, and sample acquisition and storage. I made weekly trips, sometimes more frequent, to his clinical research office to collect samples. I coordinated with his staff to collect subjects' diet records. I analyzed the biological samples for the analytes of interest in my professor's laboratory, calculated nutrient intakes from diet records, and finally got to the point of writing a manuscript. It would be a chapter in my dissertation and possibly a published paper. But my timeline (for completing the dissertation) was apparently not the first thing on my collaborator's mind. My emails and telephone calls to him asking for input on the manuscript, "reminding" him to comment, were interpreted as harassment (the word he used in the last phone call I ever placed to him). After further sharply expressing his anger, I learned that he would get to it when he got to it; I wasn't his first priority. Eventually I got over it. But what did I learn? One lesson was that I had brought virtually nothing to the table. We did eventually get the manuscript published, and the collaborator was a co-author. But he didn't need this paper; he had hundreds of publications. He had little interest in the outcome of the collaboration because there wasn't much in it for him. Another lesson I learned was to be flexible. In this case, I couldn't see past my own timeline. I had a very specific idea about how to pull my dissertation together, in what order things would be done, and how they would be done. In retrospect, there was no need for me to be so rigid or to rush anyone for comments on my manuscript. I could have waited and gone along with a more relaxed time frame. Being flexible and learning to adjust my expectations was a key lesson here.

I cultivated another collaboration during graduate school. This one has turned out to be one of the most rewarding relationships in my academic career.

My professor was new to campus when I joined her lab; I was her first graduate student. She was from another institution and had few connections on campus. I, on the other hand, had spent enough years at UW-Madison to earn both a BA and a BS, so I was pretty familiar with the "lay of the land." Anyway, she knew our campus had a rich tradition in animal sciences and that there was a swine unit affiliated with the university. As we worked out what my projects would be, first toward an MS and eventually toward a Ph.D. in nutritional sciences, she suggested I find out how to connect with the swine center. After some investigation, I traced down Dr. Tom Crenshaw, professor of animal sciences at UW-Madison, international expert in swine and swine nutrition, and director of the Swine Research and Teaching Center (SRTC). I arranged a meeting with him and described the various studies we wanted to do related to vitamin A metabolism. Tom could not have been more approachable, more enthusiastic. He was brimming with interest in the work and in me and had many ideas about what we could do. After many more meetings, hours of discussion and planning, and many journal clubs, we executed an intervention in pregnant sows that would help me test one of the hypotheses we wanted to test. He said it would help him too as it would help the SRTC meet its commitment to supporting biomedical research at UW-Madison. Great, I thought—something for both sides (recalling a different scenario where that had not been the case).

But there were other strengths of the collaboration which contributed to its success and longevity. My experiment involved collection of blood and milk at numerous time points over several days. It was labor intensive, requiring SRTC staff to learn the method for placing vascular catheters in pigs. Fortunately, this was useful to Tom as it allowed him to train and expose his staff to this method, which he said would be useful for other studies. Additionally, because my intervention was so involved (involving many overnight stays at the swine unit, a 45 mile drive from my home), my professor authorized me to hire undergraduate students to assist with sample collections. As I brought students to the swine unit to show them what needed to be done, I realized I brought something else to the table in this collaboration; it turned out Tom loved to teach and thrived on mentoring. Tom spent hours with the students, showing them the unit, explaining how things worked, and so on. At first I was disappointed as I simply wanted them to learn what I needed them to do as quickly as possible. I had just had a baby, and this was a far drive from home as every trip there and back took hours. And here Tom was taking my students off to the side and touring the unit, explaining everything in detail and asking them questions about what they wanted to do with their future. Fortunately, I began to realize that as my needs were being met—the intervention was going, we were getting samples—so were his. In fact, in retrospect, that's very likely what kept him interested and invested in my study. The students I brought to the unit, while collecting my samples, helped Tom to satisfy his yearning to teach and mentor.

I continued this collaboration after graduate school. I participated in various journal clubs that he and/or I organized, which included various students and faculty from different disciplines. Sometimes the topic was stones, at other times it was bones (one of Tom's interests). I had an idea that maybe my experience in using swine in research at the SRTC might be useful in studying the effect of

nutritional factors on stones. A couple of years after starting as a scientist in the Department of Urology at UW-Madison, an opportunity arose. Due to changes in various urology research laboratories, the basic research opportunities with which our endourology fellows had been involved started to dry up, I realized I could offer an opportunity for stone research in swine. Because I had kept up a relationship with Tom, even without conducting any experiments, this was a collaboration that was now ready to resume. A lesson I learned from this experience was the power of regular interactions, such as journal clubs and seminars, to keep relationships and collaborations going through times of no active research.

Finally, through my work in the Department of Urology with Steve Nakada, I learned other lessons about collaborating. One is the importance of regular, ongoing meetings to track progress on agreed-upon tasks, goals, and objectives. Even when it seems like there is nothing new to discuss, that regular meeting serves as an aid to staying sharp and developing new ideas. In working collaboratively with both inexperienced and experienced investigators, I learned that people stay motivated when they get something out of it, whatever that means for them. It could be authorship on a paper, an abstract and being able to present it at a meeting, or something else, such as training or the opportunity to mentor. As I work with students, I apply this lesson by thinking about what drives them and then try to use that to maintain their motivation. The freedom to disagree and to encourage intellectual debate is another important aspect to successfully working together. I am fortunate that this is a characteristic of several of my academic relationships. It is not uncommon in our urology research group meetings, for example, to begin with opposing ideas and then work through them. Sometimes we end up somewhere in the middle, and other times one or more of us have the flexibility and open-mindedness to change positions. In other cases, such as in many journal club meetings with Tom, intellectual debates and differences were made fun. This helped to create a culture of learning and curiosity and made the students who were part of those discussions more likely to participate. Finally, allowing people to work in the fashion that works for them seems to me an important feature of a good collaboration. This means being adaptable and willing to adjust expectations. In the case of my collaboration with Tom, it meant me accepting that a "brief" meeting in his office might go on for two hours. For his part, it meant accepting my need for certain outcomes to be realized within a designated time frame. When collaborating with Steve, a busy practicing surgeon and department chair, it meant for me that meetings and most all contact with him needed to be focused, concise, and generally as brief but as pithy as possible. For Steve, it meant allowing me to work when I'm most productive, which wasn't always first thing in the morning. So early morning meetings were kept to a minimum, and my preference for working later into the night was not a problem. He also keyed into and respected what motivated me.

Summary. Collaborative science is a means to producing knowledge that would otherwise never happen [24], especially now when research questions are larger and more involved and especially in contrast to the traditional paradigm of an independent investigator. When multifaceted expertise is required, groups of

Table 7.2 Key features of successful collaborations and lessons learned. This list, which appears in no particular order, draws upon the cited literature and on personal experiences

Features/Lessons	Rationale
Recognize and value each other's unique expertise while maintaining a certain independence	Creates a culture of respect and individuality, the latter of which promotes interdependence (acknowledging that outcomes are contingent upon the actions of another)
Recognize conflict is normal	Anticipating this may prompt preemptive discussions and decision-making, which are usually better had when things are going well
Jointly participate in decisions	Avoids unnecessary conflict; promotes investment by all participants and a cooperative spirit
Intellectual differences and debate are encouraged	Promotes a culture of learning; creates a safe space for participation, and builds trust
Allow people to work in the ways that are the most productive for them	Maximizes collaborative outcomes when everyone participating at high level; individuals feel respected
Be flexible and willing to adjust expectations	There might not be only one way for something to be done
Have regularly scheduled, ongoing meetings	Promotes accountability to one another, interdependence, and mutual responsibility
Realize that each individual needs something out of the collaboration	Examples include shared credit, authorship, education, opportunity to mentor, academic recognition, funding, access to resources, labor, social capital
Avoid unnecessary power structures and/or suspend power relations during active collaboration	Promotes open and honest communication; encourages a feeling of shared empowerment, enhancing individuals' motivation and participation

researchers who join with a common vision to solve problems bring their individual knowledge and expertise. Career advancement systems and other forms of recognition will hopefully acknowledge and include the accomplishments derived from successful research collaborations. Key features of successful collaborations and some of the lessons learned from personal experience are summarized (Table 7.2). As funding agencies increasingly call for research collaborations, knowledge of some of the challenges and best practices for forming them, whether obtained from the literature or the experience of others, is useful.

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Chapter 8
Patient Satisfaction

Sarah E. Tevis and Nizar N. Jarjour

Background

Satisfaction is the fulfillment of one's wishes, expectations, or needs, or the pleasure derived from this. It can be viewed as a measure of how happy a person is with a given situation, which is often difficult to gauge during daily interactions with people. This is even more difficult to decipher as a surgeon interacting with a patient, perhaps one you are meeting for the first time. Many of us have been surprised to hear that a patient complained about their care after we interacted with them seemingly without incident. Therefore, a number of standardized tools have been developed to examine how satisfied patients are with their care. The data obtained can be harnessed to change our practice and shore up deficiencies to improve patient care and satisfaction.

Patient satisfaction is a quantitative measure of how patient experience as they progress through the care process compares with their expectations. This differs from other commonly used metrics. **Patient-reported outcome measures** (PROMs) are any report of the status of a patients' health condition or health behavior that comes directly from a patient without interpretation by a clinician. This includes tools that measure health-related quality of life and symptoms. **Patient-centered care** is described as safe, effective, timely, efficient, and equitable care. **Patient experience** encompasses the cumulative evaluation of the patient with the healthcare system and providers; with particular focus on relationships, trust, and peace of mind.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_8

History of Patient Satisfaction

In 1999, the Institute of Medicine published "To Err is Human: Building a Safer Health System," which described thousands of deaths due to medical errors in the United States [1]. While the healthcare quality improvement movement started years earlier, the safety of medical care was not publicly scrutinized until the publication of this report. Healthcare organizations, insurers, government organizations, and accrediting groups responded with interventions to improve safety and quality of care in the United States, which included a focus on involving patients in their care. In 2002, the Centers for Medicare and Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ) joined forces to develop the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey [2]. The main objectives of the HCAHPS survey were to allow consumers to objectively compare hospitals, motivate hospitals to improve quality of care, and increase transparency through public reporting of survey results. The psychometric properties of the survey were validated and the HCAHPS survey was endorsed by the National Quality Forum (NQF) in 2005.

Hospital has placed added focus on improving HCAHPS scores as patient satisfaction is now tied to Medicare reimbursement. HCAHPS scores fulfill the Patient and Caregiver Experience of Care/Care Coordination domain that comprises 25% of the Total Performance Score in the CMS Hospital Value-Based Purchasing program. Importantly, patient feedback can lead to improvements in care delivery and better outcomes. Patients who are satisfied with their care will return themselves and recommend the hospital or physician to friends and family. Patients can now reach a large number of people very quickly using social media and online platforms and, as a result, they are increasingly being considered as customers.

Measurement Tools

The HCAHPS survey, like other standardized patient satisfaction questionnaires, attempts to quantify subjective opinion based on evaluation at multiple patient touch points [3]. The survey consists of 32 questions administered to a random sample of adult patients discharged from medical, surgical, or obstetric services. The survey includes global questions about overall rating of the hospital and willingness to recommend the hospital on a scale of 0–10. The remainder of the questions, each with 4 multiple choice answers, asks about interactions and communications with physicians and nurses, ease of access such as appointment scheduling, responsiveness of hospital staff, pain management, communication about medicines, discharge instructions, and environmental factors such as cleanliness of the facility. Each question like "During this hospital stay, how often did doctors listen carefully to you" has these possible responses: never, sometimes, usually, and always. "Top box" scores indicate the percentage of patients

who chose the most favorable answer for each question. For the "doctors listen carefully to you" question above, the "top box" score would be the percentage of patients who responded "always." The results of the survey are adjusted based on patient case mix and are reported quarterly by CMS. The Hospital Compare website (www.medicare.gov/hospitalcompare) administered by CMS, publicly reports hospital-specific scores and compares scores across hospitals [4].

Patient voices can be captured by other mechanisms including patient councils and representatives, consumer apps, social media, and online reviews or patient communities. Popular social media and online outlets include: Facebook, LinkedIn, YouTube, Twitter, Instagram, Angie's List, Yelp!, SnapChat, as well as various blogs and websites. Hospitals and physicians are using social media more commonly to increase brand awareness and loyalty and to educate patients and the community. A consistent social media presence with valuable information and reputable followers reinforces to patients that their provider is an expert in the field and helps providers build a positive reputation. Many patients use the internet and social media to find hospitals and providers. Researchers have examined patient postings on social media groups to evaluate patient satisfaction with specific procedures. The use of online tools has the potential to improve communication between patients and their doctors and improve access to, and satisfaction with, care. While teenagers and 20-year-olds have historically made up the majority of social media communities, today your 80-year-old bladder cancer patient is likely engaging on social media, which can be an important venue to share information, engage patients, and perhaps improve patient satisfaction.

What Correlates with High Satisfaction?

As patient satisfaction is studied more, we are learning about how institutional, process measures, and provider characteristics influence satisfaction scores [2]. Figure 8.1 summarizes many factors that have been found to be associated with high patient satisfaction. An institutional culture of safety encourages reporting patient safety events and focuses on providing safe, quality care by high performing teams. Patient satisfaction has been shown to correlate with a focus on safety, staffing, teamwork, organizational learning, timely communication of errors, and nonpunitive response to error.

Provider characteristics, interpersonal skills, and care team collaboration that is evident to the patient and family can all influence patient satisfaction. Patient satisfaction is enhanced when patients and their families feel that all health team members treat them with dignity and respect, make them a priority, and listen to their concerns. Both physician and nursing burnout has been found to be inversely associated with satisfaction scores, highlighting the need to care for our staff in order to optimize patient care. When patients and families feel there is a caring team of physicians and staff who are communicating and working well together to provide patient-centered care, they are more likely to be satisfied.

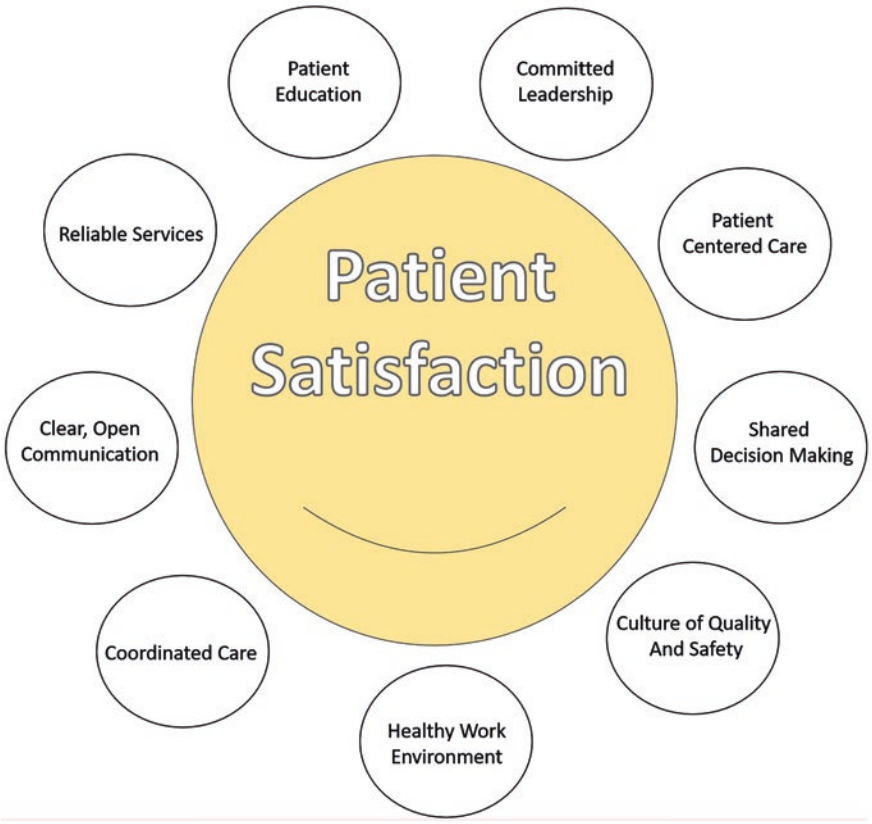

Fig. 8.1 Predictors of patient satisfaction

Process and quality measures have been studied in relation to patient satisfaction, specifically the Hospital Quality Alliance (HQA) measures and the Healthcare Effectiveness Data and Information Set (HEDIS). HQA measures evaluate compliance with best practices for acute myocardial infarction, heart failure, and pneumonia. HEDIS measures monitor primary and secondary prevention and mental health care. Multiple studies have identified a positive correlation between HQA disease-specific process measures and patient satisfaction scores on the HCAHPS survey. A study of the HEDIS measures found higher patient satisfaction in numerous domains correlated with HEDIS process measure compliance.

While HCAHPS survey results have been extensively studied, less is known about predictors of satisfaction in the surgical patient population. An evaluation of >370,000 patients undergoing a major extirpative cancer surgery [5] found modest, but statistically significant correlations between high satisfaction on the HCAHPS survey and low complication rates ($p<0.001$), readmissions ($p<0.001$), and mortality ($p<0.001$). A study of adult surgical patients requiring an overnight

admission at a single academic institution [6] found that 72% of patients provided "top box" scores for overall physician satisfaction based on the Consumer Assessment of Healthcare Providers and Systems Surgical Care (S-CAHPS) survey, which focuses on patient satisfaction with surgeons, anesthesiologists, surgical staff, and surgical care. Independent predictors of "top box" responses on the S-CAHPS survey included preoperative communication (OR 6.8, 95% CI 2.9–16.1) and day of surgery attentiveness (OR 5.4, 95% CI 2.2–13.4). A study of >46,000 surgical patients with genitourinary cancer [7] did not find an association between high satisfaction on the HCAHPS survey and death, disposition status, medical complications, or surgical complications. The authors did note that patients satisfaction was decreased with prolonged hospital stay (OR 0.77, 95% CI 0.64–0.92) and nursing-sensitive complications (OR 0.85, 95% CI 0.72–0.99), which included venous thromboembolism, mobility-related events, and sepsis. More work is needed to better delineate what influences patient satisfaction for patients undergoing surgery.

How to Improve Satisfaction Scores

The white paper by the Institute for Healthcare Improvement (IHI) on Achieving an Exceptional Patient and Family Experience of Inpatient Hospital Care is an excellent resource for administrators, physicians, and staff seeking to learn more about how to improve patient satisfaction [8]. Providers should be open to receiving patient satisfaction information in a variety of forms and should not write off certain sources, as any information about what patients think is helpful. This may include HCAHPS data, other standardized surveys, online patient reviews, patient reported outcomes, or patient comments on social media.

Patients put their trust in their surgeons at an incredibly vulnerable time and, therefore, they are looking for compassionate care that addresses their physical and emotional needs. Patients present with a wide variation in healthcare literacy, however, even the most educated patients may have trouble processing and synthesizing information during a stressful time. Flexible teaching techniques and tools (visual aids, analogies, handouts, videos, web links) should be utilized to adapt to how individual patients learn best. Physicians come to the clinic visit with an "agenda"—we want to obtain information, examine the patient, and present our surgical plan. While patients may have a different set of expectations. Therefore, physicians need to **listen** to patient (and family) concerns and expectations to fully engage in a clinical care relationship based on shared understanding and decision-making. When physicians are not attentive or are constantly interrupting a patient, the patient does not feel listened to. Consequently, trust is not built and the critical personal connection with the patient cannot be established creating an obstacle to optimal care. Conversely, when patients and families are treated with respect and empathy, they will trust the healthcare team and be more engaged in their own care. Patients and families can be engaged in their own care with shared

decision-making, being encouraged to ask questions and participate as much as they would like in their own care, thereby collaborating to develop common goals and treatment plans. Improving satisfaction isn't about being nice or giving patients everything they want, it is about taking the time to listen, communicate, and partner with patients and families for the best outcomes. Therefore, avoiding topics such as weight loss or smoking cessation or prescribing unnecessary medications such as antibiotics or pain medications, in an effort to please patient is not only ill-advised, it is unethical. Physicians have a duty to discuss sensitive matters respectfully with their patients using clear language and teaching aids to ensure understanding. For example, if weight loss is important to reduce surgical complications, take time to explain that. Physicians can specifically explain why a lifestyle modification is important for the patient's surgical care. For example, excessive abdominal weight pushes on the diaphragm leaving less room for the lung to expand and leading to greater risk of postoperative atelectasis and pneumonia. Be realistic when giving specific expectations to patients and be encouraging of their effort while avoiding the tendency to show disappointment when they are unable to reach goals such as weight loss or smoking cessation.

Communication is especially important for surgical patients who need to adequately understand the risks and benefits of a surgical procedure as part of the informed consent process and to have appropriate expectations of the potential outcomes. Some specific examples where communication and shared decision-making is key in urologic surgery include setting expectations for patients with incontinence secondary to pelvic floor weakness, deciding when to obtain and how to act on PSA results, and discussing the risk associated with specific procedures such as risk of incontinence and erectile dysfunction after prostatectomy. Medical errors should be immediately disclosed and **apologized** for, because patients deserve honesty from the surgeon in whom they placed their trust. In addition to having clear, open communication with patients, physicians need to communicate well with the entire health care team. Patients may tell a medical student, resident, MA, or RN things they don't want to "bother" their surgeon with. If you have a good relationship with your clinical team and make it clear that you want to hear their thoughts, you may learn information from your team that patients are hesitant to share with you. Patients can tell when care is well coordinated, thus it is important to do your part to ensure that by referring to your discussions with other team members, mentioning what a consultant told the patients or what a night nurse had written in his or her report. Patients and families cannot tell if your anastomosis was sewn perfectly, but they can tell if your communication with the cardiology consultant is poor or if nursing staff does not know the plan for the day. When HCFA began reporting hospital mortality data more than two decades ago hospitals with clearly higher mortalities saw no significant decrease in their patient volumes, suggesting that patients, in general, make their decisions based on personal values of the service they receive not the objective technical quality of care. It is very important to establish a connection when examining a patient by making eye contact, calling them by name, expressing kindness with words and gestures, and considering the whole person not just their illness.

Attention to their privacy, dignity, and responding appropriately to their concerns are crucial to ensuring a good patient experience.

Good communication with the care team can also improve employee satisfaction and thereby improve patient satisfaction. Having satisfied nurses improves patient satisfaction scores. Creating a healthy work environment for staff enables the recruitment and retention of staff with values that will ensure patient-centered, high-quality care. As a physician, you can influence working conditions and create joy in the workplace by making sure staff have the resources and skill they need to provide quality care, acknowledging good work and successes, and rewarding staff who go above and beyond for patients.

Patients want to know they will receive high quality, reliable care. This includes the ability to schedule appointments in a timely manner, staff that are available and responsive, and limited wait times for appointments, getting questions answered, and obtaining results. The hospital environment should also support healing with accessible parking or valet services and quiet comfortable patient waiting and care areas. A supportive environment decreases stress and improves the overall patient experience, which leads to greater patient satisfaction as it is impossible to separate patient satisfaction from other elements of care. Patients and families are looking at all aspect of care from the hospital environment, ease of use, perceived quality of care, and the relationships with the healthcare team, and among members of that team. As demonstrated in Fig. 8.2, service is only as good as the weakest link in the chain; therefore, physicians need to pay close attention to supporting

Fig. 8.2 Patient satisfaction is intertwined with other elements of care

and training all team members. They should aim to hire competent people who are willing to learn and can follow agreed upon standards. Exam rooms need to be clean with comfortable furniture to seat patients and accommodate family members or friends.

Future of Patient Satisfaction

In addition to measuring and responding to patient satisfaction, healthcare organizations and physicians will need to evaluate drivers of patient satisfaction including patient-centered care, employee engagement, patient education, reliability, and coordination of care. Hospitals can learn from high performing industries such as aviation, manufacturing, construction, and finance to improve patient safety and reliability. They can also learn how to optimize patient experience from service industry leaders such as Disney, where the pervasive culture is focused on the guest experience.

While incorporating patient satisfaction scores into hospital reimbursement schema has placed an added emphasis on patient satisfaction, other measures of patient-centered care such as PROMs are likely to play an important role in the future. PROMs measure procedure-specific outcomes that are important to patients and providers, as opposed to overall satisfaction measure used in other surveys. Therefore, PROMs provide a more granular view of the patient's physical, emotional, and psychosocial responses to treatment. New regulation and demands by patient and payers are likely to increased transparency in reporting of all outcomes allowing consumers to compare hospitals and leading to more focus by providers and hospitals on efforts improve outcomes and patient experience.

In order to make a measurable difference in patient satisfaction, the organization and providers have to genuinely want to provide high-quality, patient-centered care. If the focus is solely on raising satisfaction scores or reimbursement, it will be difficult to change the institutional culture and patient satisfaction scores. The most reliable way to produce highly satisfied patients and families is with a pervasive culture of quality and safety, sincere efforts to engage patients and families, and providing the care in an environment that we would want for our own family. The majority of adults are now using social media and this is not limited to the young, as a third of seniors are now using Facebook. There are ample venues to share experiences at this time from Twitter to Yelp! to SnapChat to blogs and Facebook posts. While these tools may not have a direct relationship with objective data of care quality, or even with the results of standard surveys such as HCAHPS, hospitals and physicians are paying greater attention to online postings and seeking help from media experts to monitor and respond to patient comments. Soon the days of post discharge surveys will be in the distant past and patients will be able to express their opinions on ongoing basis using handheld devices, apps, or computers to provide feedback to physicians and their team. Physicians will receive the data in real time, giving them the opportunity to respond to patient

concerns as they arise. The collective timely feedback from patients in a hospital, if appropriately monitored, can be a very useful barometer to gauge how well a given unit is doing in meeting patients' needs and where help needs to be dispatched to attend to any deficiency. This will no doubt allow for greater participation of patients and their family in their care and should further improve patient satisfaction with the care they receive.

- Ways to improve patient satisfaction
  - Compassionate care
  - Culture of patient-centered care
  - Clear, open communication
  - Shared decision-making
  - Team work amongst multi-disciplinary team
  - Supportive and comfortable hospital environment

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Chapter 9
Managing the Operating Room: A Urologist's Guide to Enhancing Efficiency and Quality

David F. Jarrard

Introduction

Running an efficient operating schedule is a major part of a clinical urologist's practice. The operating room is one of the most costly areas in the medical system. A single surgical procedure can require many hours from physicians, assistants, and nurses. The Agency for Healthcare Research and Quality found that hospitalizations that involved surgery accounted for 48% of hospital costs. Thus, surgeon efficiency in the operating room not only improves the financial bottom line for the hospital, but also expands free time for the urologist to pursue administrative, academic, fitness, and family pursuits.

An early advocate of time management, Benjamin Franklin emphasized in his essay entitled "*The Way to Wealth*" some of the important themes for efficiency including "Time is money," and "Don't leave until tomorrow what you can do today." Efficiency and time management skills are rarely taught in medical school or residencies and gaining this knowledge is largely left to be learned through trial and error. Although there is an overabundance of literature on time management strategies in the corporate and industrial world, little has been written for physicians and more specifically surgeons. The increasing demand for physician's time by electronic medical records, documentation, and billing can generate increased physician frustration and burnout.

This chapter will address themes to improve efficiency and quality in the peri- and intraoperative environment. Decreasing operative case time may have other

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_9

benefits including improved outcomes for the patient. For multiple procedures, shorter operative time (adjusted for case complexity and other factors) is associated with decreased infection rates and superior surgical outcomes [1–3]. Based on these analyses of large databases, some authors have proposed operative time be considered as an individual quality metric, and an alternative to case volume [1]. Regardless, there are many compelling reasons to run an efficient operating room and nearly all of them require the attention of the surgeon in setting up the processes for well-organized care. Metrics for the urologist to consider in an effort to improve efficiency include first case start times, case times, turnover times, and patient complications and outcomes.

Navigating the Operating Room: Best Practices

Preoperative holding. Meeting the patient and the family in the preoperative area is a critical component of a successful operating room. Conducting a review to update yourself on any important changes in the patient's past medical conditions, surgical history, and recent events pertaining to the disease. Review the consent and mark the affected side on the patient. Briefly review the planned course of action highlighting any decisions that might be encountered during the case with the patient and family. For example, if extensive, unrecognized metastatic disease is present this may require a change in the operative plan. Outline the planned course of hospitalization. At the end of the conversation, ask the patient (and attendant family) if they have any further questions. Discuss with the family plans for communication during and after the operation.

This preoperative meeting is greatly facilitated by preoperative education done during the prior clinic meeting or at some point prior to the surgery date. In addition to the surgeon outlining the procedure, complications, and expected outcomes, meeting with nursing to outline the details on preoperative preparation can improve patient satisfaction. We have employed a series of educational videos for common urologic procedures (e.g., stone treatment, TURP, radical prostatectomy) that further educates the patient. These approaches increase knowledge, provide reassurance, and multiple opportunities for the patient to ask questions. This results in an efficient, smoother hospital course. Clearly, if an unexpected, emergency procedure this transfer of information takes place the day of the procedure in its entirety.

Reviewing the case and equipment with staff. Take a few minutes before the patient enters the operative theater to orient the team to the case including positioning, length of time, potential blood loss and any unusual aspects. Reviewing the equipment needed or potentially needed, the sutures required, and other aspects will help avoid confusion and ultimately improve patient safety, quality of care, and team satisfaction. Make certain the required films are present and displayed in the operating room.

Visualization. The role of preparation and visualization *prior to the operation* is an important tool for the newer surgeon and for cases that are more complex. Picturing the case steps, possible decision points and progression of the case helps with set up, speed of the operation, and increases the likelihood of a successful outcome. Reviewing ones notes or literature on complex cases encountered and their operative approach can help with this process.

Of note, tardiness in the operating room is one of the worst sins a surgeon can commit. A morning case that begins 30 min late has repercussions for the entire day. Additionally, it undermines the motivation and efficiency of the staff and results in loss of team cohesion.

Time-out. The time-out is an important safety and efficiency step just prior to the operation. A time-out is a universal patient safety protocol performed by the surgical team to prevent errors in surgery. In the operating room before anesthesia is initiated the team and the patient review the correct patient, side and type of surgery, available equipment, medications, and fire safety. A time-out involves the surgeons, anesthesia providers, circulating nurses, operating room technicians, students, and other members present in the operating room. If multiple procedures by different teams will be performed, a time-out needs to be reviewed for each procedure individually.

Progression through the case. Efficient use of time in the operating room is important. Operating room time is expensive and this charge begins the minute the patient enters the operating room theater. The lead surgeon can set the tone for efficient use of this time employing several techniques. Paying attention to all aspects of the procedure from checking positioning to prepping the patient with antibacterial solution. If the staff is busy with other aspects of the setup, pitching in and helping shave and prep the patient emphasizes the importance of efficiency and is a positive message to the team.

During progression of the case, verbally letting the scrub assistant know what is needed for the next step (or steps) before reaching that point can save 10–15 s at numerous points, all of which adds up to time saved over a longer case. Not having to wait for a suture, a drain, or other equipment also improves the "rhythm" of the case and helps decrease stress on the assistants and circulating staff. Multiple studies have shown the most frequent disruptors in operative cases are equipment-related and miscommunication and/or coordination [4, 5].

Team building. Creating a culture of open communication among the team is important for efficiency and above all patient safety. Identifying these problems ahead of time can help surgeons and their teams avoid a time-consuming setback in the middle of an operation. Banter regarding non-case related issues is important in the operating room during less busy critical or stressful periods. This can reinforce collegiality and make the operating a more pleasant environment especially for those members of the team who are required to be there every day.

Similarly, music can help as a pleasant distractor for the staff provided it does not interfere with communication or concentration.

Resident teaching. Teaching in the operating room affects efficiency and operative time. In a recent study at a major academic center, roughly half of the operative case time is spent teaching [6]. Directing, commenting, and informing behaviors, and responding to questions and/or comments comprised the most common teaching methods. Changes in the approach and amount of teaching can vary based on a number of factors including the complexity of the case, the schedule, and the direct physical control the attending surgeon has at any one time.

Teaching laparoscopic/robotic and open surgical cases may require different approaches. With open cases, the resident can have more flexibility since the primary surgeon has more direct, hands-on control over the case. One useful teaching approach with robotic/laparoscopic surgery used for repetitive cases (e.g., robotic prostatectomy) that impacts efficiency less is the use of repetitive tasks. A division of the operation into different segments based on skill level is used for the same type of case done multiple times a day or week. For example with robotic prostatectomy, the case is divided into robotic docking and port placement, prostate exposure, bladder neck dissection, nerve sparing, and urethral anastomosis. Allowing the resident to repeatedly perform the same segment leads to quicker progression and satisfaction while minimizing the impact on overall case time.

Completing the case. As the operative procedure is finishing and before the wound is closed, taking a few minutes to have the operative team perform a review is important for safety and efficiency. Confirming the procedure, and reviewing accurate specimen labeling, wound classification, blood loss, complications, surgical sponge count, and any key patient concerns for recovery and management are part of this debrief.

Room turnover. Lengthy turnovers are a source of significant dissatisfaction among surgeons, who see turnovers as lost operative time. Are there aspects that the surgeon can help with? Making certain that the next case is consented and reviewed including altering the operative team to any special requirements prevents delays. Setting expectations can assist to a point, but may have unintended consequences related to quality. The best approach is to be supportive and available should any issues arise.

Complications and outcomes. Tracking untoward events and complicating factors are critical in the pursuit of efficiency for the surgeon. These include both perioperative and postoperative events. From the surgeon standpoint, providing consistency of service is important for patients, hospitals, and operating rooms. This consistency also extends to other team members including anesthesia, nursing, and other staff. It is important for the surgeon to monitor his or her results with regard

to infection, bleeding, hospital stay as well as readmission rate. Starting in 2010, Medicare began requiring ambulatory surgery centers (ASCs) to report surgical complications 30 days after the procedure and one year afterwards for implants. Similarly, readmission within 30 days is tracked for procedures requiring inpatient admission. Longer term outcomes are also important and require monitoring by the urologist including recurrence, failure, and other commonly reported case features. This feedback can identify areas of deficiency and ultimately result in improved patient care and consistency.

Other components to navigate. In the modern hospital system, new surgeons should be aware that the traditional method of basing block time on each individual surgeons' potential utilization rates has evolved to the more frequently based approach based on under and overutilization. If the surgeon is unable to utilize time for whatever reason, block releases are one way for operating room managers to improve efficiency. Utilizing block time to its greatest potential (>80%) is an aspect that many hospitals and surgery centers demand.

Efficiency in the operating room also involves using resources wisely. Checking supply costs against national averages gives the individual surgeon information on how your costs compare to national averages. Learning from colleagues that generate less cost can help improve this metric.

Some centers have also begun tracking the cost of labor per case to identify surgeons who are taking longer to complete a standard case. This includes using more staff per case or using more expensive staff, for example registered nurses instead of technicians. This metric can help explain variance between surgeons and provides opportunities for process improvement.

Conflict invariably arises in the operating room where patient responsibility is shared and disagreements arise due to personal differences, informational deficiency, role incompatibility, and environmental stress [7]. Roughly 20% of the physician executive's time was spent in dealing with these conflicts [8]. A professional relationship is required between two or more physicians, in order to provide care in a safe and appropriate manner. For example, postponement or cancelation of a planned surgical procedure by anesthesia due to poorly controlled systemic diseases or other factors occurs frequently from 2 to 14% in some studies [9]. As a surgeon, it is critical to work to resolve these issues with the realization that patient safety and care is and should be the primary driving force. Similarly, conflict between the surgeon and nursing or other support staff may arise and can lead to stress and patient safety issues. If this situation arises, it is important to step back in order to avoid escalating the situation and look for a neutral mediator (e.g., anesthesiologist, staff surgeon leader, nursing supervisor) to help resolve the situation. This additional view can help to depersonalize the issues, defuse tensions, and find a solution. The reaffirmation of the common goal of patient care and the recognition of the legitimate differences can often work toward resolving differences.

Conclusions

Running an efficient operating room has a number of advantages including cost, reduced stress, and additional time. Operating room efficiency directly reflects on the triple aim of patient care including lower cost, outstanding care, and patient safety. By establishing these behaviors and expectations early, these practices will pay dividends in productivity and satisfaction for years to come.

Take Home Points

- Be early and present in the operating room.
- Spend time orienting the staff to the case and checking equipment.
- During the case, be proactive, communicative, and forward thinking.
- Tracking your complications and outcomes and comparing these to national metrics are important to efficiency and quality.
- Setting up the expectations of efficiency and quality will pay dividends in terms of more time for your career, leisure, and family as well as better patient care.

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Chapter 10
Enhancing and Promoting Your Office Urology Practice

David Mobley and Neil Baum

The reality is if you don't understand business practices, you can't survive in today's market. You will no longer be practicing medicine and providing the care to the patient that you went to medical school to treat.

As a result of lowered reimbursements and rising overhead costs, urologists are looking for methods and techniques to become more efficient and more productive. Doctors are universally more efficient in their offices than at the hospital, the operating room or the ambulatory treatment center.

Urologists today are challenged like no other time in our glorious history. Trends are taking place moving surgical patients from the operating room to the office setting using minimally invasive surgery instead of hospital procedures. There is a trend from open surgery to robotic and laparoscopic surgery. There is movement from solo practice to large group practices and younger urologists are being employed by hospitals instead of joining groups or starting a solo practice. There is also a trend for urologists to become involved in the business of medicine and many are pursuing combined MD and MBA degrees [1]. Urologists have become concerned that reimbursements are decreasing, overhead costs are rising and incomes are decreasing as a result. The aging baby boomers will have increasing medical problems requiring our attention, and there will be additional demands upon physicians, particularly urologists. With physicians retiring at an earlier age and inadequate replacements to accommodate the increased number of patients, there is going to be a serious time challenge to physicians. The take-home message is that urologists are going to have to be more efficient and more productive in order to adapt to the future. One opportunity for all urologists is to improve their efficiency by treating various urologic diseases and conditions in the office instead of in the hospital. This chapter will discuss the advantages to patients, to

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_10

doctors, and to insurance companies of becoming more efficient by seeing more patients and doing more procedures in the office.

This chapter will discuss (1) how to prepare the patient for your visit *before* the patient enters the practice, (2) managing the patient once they are *in* the practice, and (3) how to continue the encounter *after* the patient completes their visit.

Before the Patient Enters the Practice

The interaction of the patient with the practice begins long before the physician is eyeball to eyeball with the patient. It usually starts with the telephone. The telephone is the lifeline of your practice. Far too often office managers delegate the job of answering the telephones to the employee with the least amount of training and the lowest salary. A new patient's initial telephone call is the first interaction between the patient and your practice. During that telephone interaction you have a golden opportunity to create a positive first impression on the caller. If you (or your office ambassador, the receptionist) fail to create a positive impression, the patient may form a negative opinion toward you and your practice even before opening the door of your office to meet you or your staff. Our take-home message: you only get one chance to create a first impression.

Next, you want the receptionist directing the patient to the practice's website. If possible the receptionist identifies the reason for the visit to the urologist. The well-informed and knowledgeable receptionist directs the caller to a page that has educational material pertinent to the reason for their visit to the urologist. For example, if the patient is requesting an appointment for an evaluation of an elevated PSA level, the receptionist can direct the patient to information on the practice website about PSA elevation and what are the tests and procedures that might be done to evaluate the rise in the PSA. Likewise it is valuable to have information on your website about common urologic conditions and treatments such as BPH, epididymitis, and treatment for localized prostate cancer.

In order to become more efficient, the patient should complete their demographic information and complete a health questionnaire before they come to the office. These forms should be on the website and can be submitted electronically or printed from the website and the hard copy brought with the patient to the office and then scanned into the patient's EMR. By completing these documents prior to the first visit, this avoids the patient waiting in the reception area for 20–30 min completing this information prior to their visit. Patients are told that this will expedite their visit if they complete this information prior to the visit. Patients should also be told to bring a list of all of their medications including any over the counter pills or supplements that they are using.

The patients are also informed that the visit will be quicker if they bring copies of their lab work or results of any tests or procedures. For example, if they have had previous blood tests, imaging studies, or pathology reports, these should be brought by the patient at the time of their visit. This avoids having reports sent to the office and the reports not being able to be easily located or the situation where the urology office calls another office to receive a copy of a report which usually

necessitates a signed request, retrieval of the report, and the time it takes to FAX the report to the urology office. All of which can significantly delay the visit and result in a significant loss of efficiency.

Another simple suggestion is for the receptionist to tell the patient that a urine specimen will be necessary at the time of the first visit. The patients should be informed about consuming ample volumes of fluids before they come to the office and the patient is to inform the front desk that they are ready to provide a specimen upon arrival.

The receptionist informs the patient an estimate of how long the first visit might take and what will be done on that visit. For example, if a man is being evaluated for the enlarged prostate gland, then he might be told that he will be requested to do a flow rate, a bladder ultrasound, and possibly a cystoscopy. He then should be told that the procedures are explained on the website and that he should read about the tests so he is ready to have the tests upon arrival in the office.

These are simple steps that can easily be accomplished by any urology practice resulting in a significant improvement in practice efficiency. Now a new patient can begin the process of becoming a part of the practice before even before they enter the practice. These few steps make it easy for the patient, easy for the staff, and improves the efficiency of the practice, allowing the urologist to see more patients and be more productive.

When the Patient Has Arrived in Your Practice

The patient has arrived and has already provided their demographic information and the health questionnaire before they come to the office and the patient has been taken to the exam room. The physician should meet the patient and have a 1–2-min. discussion about some areas outside of their medical\urologic concerns, i.e., what kind of work do you do, where do you live, who referred you to our practice? These are questions that endear the patient to the urologist without discussions specific to the urologic problem.

To enhance efficiency, the doctor makes use a scribe to take the history of the present illness, the review of systems, and the past medical history. One of the most effective methods to enhance the efficiency of my practice is to make use of a scribe. A scribe is a staff member who shadows a physician and takes notes either in the chart, or better yet, on the computer thus freeing the doctor to have more eye to eye contact with the patient.

How Does the Scribe Work?

The scribe interacts with a new patient after the doctor introduces him\herself to the patient. The scribe then takes the history of the present illness, records the past medical history, and the review of systems. The scribe then presents the HOPI to

the physician and then accompanies the physician into the room. At this point, the doctor may ask a few additional questions or probe any aspects of the HOPI that are not clear or need a more in-depth questioning. The doctor conducts the physical exam and the scribe then records the positive findings in the chart or the EMR. At this juncture, the urologist can have a discussion with the patient regarding the diagnosis and the plan of management with the patient and the scribe records the doctor's plan of action. The physician can then answer any questions the patient may have and the scribe can give the chart or the computer to the nurse who will make the necessary arrangements for any lab tests, studies, or surgeries, provide the patient with sample medications and written instructions for the use of the medications, provide pertinent educational materials, and make the follow up appointments. While the nurse is taking care of one patient, the scribe has moved to the next patient, staying one patient ahead of the physician.

Advantages of the Scribe

Most of all your scribe improves the efficiency of the practice. You are now able to be eye to eye with the patient and focus on communicating with the patient instead of writing or using the computer. As a result of using the scribe you are able to see 5–6 additional patients each full day in the office. Also, my coding has moved from the previous Level 2–3, to Level 4–5 as the scribe is more thorough conducting the review of systems, past medical history, and recording the fine nuances of the physical exam that I often neglected to document such as a neurologic and dermatologic examination.

The disadvantages of having a scribe are cost, time to train the scribe, and the changing of habits from you doing the writing in the chart or working on the computers to allowing someone else to do it for you. In the beginning, this can be frustrating but when you see how efficient you become, you will enjoy the luxury of having a scribe. As a matter of fact, when the scribe is absent or on vacation and I have to use the computer, I realize how invaluable your scribe is and how effective the technique is to enhance your practice.

Getting Started

First decide if you need a scribe. If patients need to wait more than 4–6 weeks to make an appointment for a routine visit, then you have a backlog of patients and a scribe will help you reduce that backlog. If your last patient is scheduled at 4 or 4:30 and you aren't finished with patients until 5:30 or 6:00, a scribe may help improve the efficiency of your practice. If the majority of your codes are Level 3 or less, you may improve your productivity by having a scribe. Finally, if you have

not yet moved to an EMR but are technophobic, then a scribe might be a natural segue to implementing the EMR.

No chapter on efficiency and productivity would be complete without mentioning the use of physician assistants (PA) and nurse practitioners (NP). PA\NP may play a crucial role in the future of healthcare because of the rising number of patients needing care, i.e., the aging of the baby boomer population with nearly 10,000 people turning 65 every day, and the pressing demands upon a urologist's time. Using PA\NP may decrease healthcare costs, enable faster delivery of care, and shorten wait times for patients. PA\NP spend time consulting with patients and reviewing lab tests, history, and chronic conditions. After the PA\NP presents the patient's condition to physicians, the PA\NP\urologist collaborate to form a diagnostic and treatment plan. The physician then meets with patients to deliver the assessment and care instructions. This model has been successfully used and enable physicians to see 75 to 95 patients per day.

Using Videos to Educate Your Patients

Urologists, now more than ever before, will need to be more efficient in order to remain more productive. It wasn't but a few years ago that doctors saw low volumes of patients and were able to spend time educating patients about their medical condition and helping them understand the importance of being compliant. Now urologists are going to need to see larger volumes of patients and will be spending less time with each patient and will not have the luxury of lengthy explanations about their health and providing them with one-to-one educational discussions. Nowadays patients are relying on the Internet and other sources such as social media to obtain medical information. As a result, patients are often less compliant and when compliance has been decreased, the outcomes are often less desirable.

In the recent past, the formula for practice productivity was low patient volumes, substantial reimbursements in a fee for service arrangement, and good doctor–patient relationships. Today with the Affordable Care Act, the situation is reversed: large patient volumes, decreased reimbursements for the same services that were performed a few years ago, and less time spent with each patient. In order to maintain productivity urologists will be forced to see more patients in the same time as a few years ago. As a result of spending less time with patients, there is less opportunity to spend time educating patients. Patients may be less compliant because they have less information about their medical condition and this may portend a deterioration in patient outcomes.

With the use of videos, you can educate patients with exactly the message you want them to receive. This is far more effective and appreciated than videos distributed by pharmaceutical companies and vendors of equipment that you may use in your office and in the hospital.

1. Definition of the procedure or test
2. How the procedure or test is performed
3. Patient preparation for the test or procedure
4. Expectations after the procedure or test
5. Complications and their relative frequency
6. Alternatives of treatment

Fig. 10.1 Sample of a Script Format

With regards to videos, we suggest that you select topics that you discuss with patients on a regular basis. If you have a discussion with patients about PSA elevation several times a day or week, this would be an appropriate topic for a video. We like to select topics that are of current interests to patients.

Next you will need to create a script. In most instances the script can follow the format shown in Fig. 10.1. The script serves as a teleprompter by putting the bullet points into a PowerPoint presentation.

The quality of the video created with the iPhone, or android from Samsung, is excellent. The only other piece of equipment that we recommend is a flexible tripod to hold the iPhone. These are available on Amazon at http://www.amazon.com/dp/B017NA7V1U?psc=1 (Fig. 10.2).

With the smartphone on the tripod attached to the computer and the PowerPoint program serving as your notes, you are ready to create a video. We suggest that videos be limited to 5–7 min as that is a reasonable attention span for most patients.

Fig. 10.2 Example of tripod that holds the smartphone for creating DIY videos

Now the videos can be uploaded to your EMR or on separate computers in each of your exam rooms. Each video might end with the statement, "I hope you have found this video on <name of topic> helpful, and if you open the door at the end of the video, I will return to the exam room and provide you with a summary of the <topic> and will answer any questions you may have. We refer to this as the "sandwich" technique where the doctor interacts with the patient first, performs the examination, followed by showing the video, and ending with the doctor returning to the room to answer any questions that the patient may have about the topic.

Advantages of Creating Videos

When patients are watching the video, you can be seeing additional patients or perform brief office procedures. You can anticipate a 15–20% improvement in office efficiency by using educational videos. You can also find that patients will appreciate the education and the written summary that should accompany each video.

Videos and Medical-Legal Protection

Documentation is necessary in order to protect ourselves from litigation. It is possible to use videos to demonstrate that the patient received information and education by documenting in the chart that the patient saw the video on a condition, procedure, or surgery. We suggest that you also include that all questions were answered before the patient left the office. To confirm that the patient *understood* the condition, the surgery, or the procedure, you can use a true/false questionnaire that the patient can answer after watching the video and include this in the chart. An example of a questionnaire that we use *after* the patient watches a video on vasectomy is shown in Fig. 10.3.

This questionnaire and the results can be added to your medical records with a statement such as, "<name of patient> watched a video on the treatment of stress incontinence. The video discussed the procedure, risks, and complications, alternatives of treatment, including the option to have no treatment. She agrees to proceeding with a mid-urethral sling using synthetic mesh and understands the risks and complications associated with the use of mesh." We believe this makes the video as an excellent form of medical-legal protection for the doctor and that the video enhances the informed consent process.

1. True or False. The ejaculate or fluid may contain sperm after two months or longer following a vasectomy.
2. True or False. Complications following a vasectomy include bleeding, infection, and\or pain.
3. True or False. Two semen analyses are necessary two months after a vasectomy to determine whether the vasectomy was successful or not.
4. True or False. A pregnancy may occur months or years after a successful vasectomy.

Fig. 10.3 Example of post video questionnaire on vasectomy

Bottom Line

We are challenged to be more efficient with every patient encounter. By using a scribe, having an excellent receptionist, and utilizing videos, you can enhance the efficiency of your practice.

Reference

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Chapter 11
The Importance of Coding and Billing

David Paolone

Appropriate coding and billing for services performed are a critical endeavor for any successful urological practice. Unfortunately, very little formal education of the business of medicine is a part of most urology residencies. Many residents and fellows may have some peripheral, informal exposure to the concepts of coding from attending physicians with a particular interest in this. However, many academic physicians themselves rely heavily on institutional support for obtaining proper reimbursement for work performed and have only a basic understanding of the elements of coding and billing themselves.

This chapter is not meant to be an exhaustive, detailed review of the nuances of coding and billing for all possible encounters in an outpatient urology clinic or for any number of inpatient and outpatient surgical procedures. Rather, the goal for the reader is to introduce some basic concepts in appropriate coding and billing, emphasize fundamentals regarding accuracy and honesty, and provide direction for ways of obtaining more advanced education in this topic and staying up to date with the ever-changing rules and regulations.

Coding Basics

The most fundamental concept behind successful coding is to perform what is medically indicated and necessary for a particular patient with a given diagnosis, accurately document what is done in evaluating and treating the patient, and submit charges consistent with the above. Evaluation and management codes (E/M), surgical and procedure codes (CPT), modifying codes, and diagnostic codes (ICD-10) are the language used to communicate the work done and the reason for doing it.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_11

The medical record must have supporting documentation for any work for which a physician seeks to obtain reimbursement. An overarching concept is that medical necessity trumps everything else when determination is made regarding what is permissible to be coded and billed for [1–3].

Evaluation and Management

Evaluation and management (E/M) services apply to patient evaluation in either the hospital or office setting. Medical history, physical examination, and medical decision-making represent the three elements that determine the appropriate level of service. The degree of complexity and detail for each of these elements are used to calculate an appropriate level. Whether a patient is a new patient or an established patient also determines how the appropriated code is selected. An established patient is one that has been seen by any provider within the practice in the previous three years.

For the history, the important elements include history of present illness (including sub-elements of location, quality, severity, duration, timing, context, modifying factors, and associated signs and symptoms), review of Systems (the pertinent system being the genitourinary system with other systems reviewed as indicated for the chief complaint), and past medical, family, and social history. Obviously, these are all important elements to obtaining a thorough history for any patient and are critical to being able to make an appropriate differential diagnosis and determine a plan of care for further assessment and treatment. Any introductory class on physical examination and history taking in medical school should provide the foundation for a urologist to be able to quickly obtain this important information. A paper or online intake sheet is an efficient means of obtaining this information before the provider even sees the patient. However, it is critical that one reviews such information within the patient if it is to be legitimately used to calculate a higher E/M level.

Physical examination includes a head to toe assessment of the patient from constitutional appearance and vital signs through a neurologic/psychiatric assessment. Obviously, the majority of the physical examination will likely be focused on the genitourinary and gastrointestinal (abdominal) systems. While it may be tempting to perform as thorough an exam as possible on every patient (and may ultimately provide the most optimal medical care), it is important to remember that *medical necessity* must be present for an element of the examination to count toward calculation of the E/M level for a given problem. For example, listening to the heart and lungs may be good medicine, but it is not necessarily critical to the assessment of a healthy young man who presents with a scrotal skin lesion and therefore may not be utilized to reach a higher level of coding.

Medical decision-making consists of the number of problems or diagnoses, the amount of data utilized to assess the symptoms (tests and radiological studies that are ordered and reviewed), and the level of risk for the given problem. Risk is determined by the stability or progression of a problem, the number and invasiveness of diagnostic procedures needed to assess the problem, and management

options required to treat the problem. A patient with a stable condition requiring only surveillance or oral medications will have a lower risk than a patient with a life-threatening condition requiring surgery. Two of the three above elements are needed to determine a level, and the lowest of the level of the two elements chosen equals the medical decision-making level.

There are some important differences in determining appropriate E/M coding level between a new and an established patient. Only two of the three key components are necessary for determining the appropriate level of service for an established patient, whereas all three components are needed for a new patient. Obviously, the history of present illness will be obtained in totality for a new patient at the time of the visit, but the ROS and past medical, family, and social history for an established patient may be reviewed and updated at the time of the visit. The HPI must be documented anew for every visit for an established patient. Since only two key components are needed for an established patient, a more limited physical examination (or lack of examination entirely if medically appropriate in a counseling appointment) will not necessarily penalize the level of service when the history and decision-making constitute a complexity that warrants an appropriately high E/M code.

Probably the most efficient way for a urologist just starting out in practice to accurately determine the appropriate E/M code for patients being seen in clinic or in consultation at the hospital is to utilize a wall chart or pocket guide that summarizes all of the above elements with the point system to tally these elements and reach a given code. Once such chart is available from Relative Value Studies Incorporated and The PRS Network. With time, familiarity with the elements of the E/M coding system and repetition amongst commonly seen diagnosis (new patient with hematuria, established patient with lower urinary tract symptoms due to benign prostatic hyperplasia, etc.) will allow appropriate coding to become second-nature and decrease reliance on such charts and guides. For new and unique patient encounters, however, a return to the basics may be invaluable in choosing the appropriate code.

An alternative to using the components outlined above also exists and may be more productive for a particular provider based on the nature of his/her practice. This alternative is to code utilizing time as the determinant for the level of service. This is only an option if over 50% of the E/M encounter is spent on patient education and counseling regarding a particular problem or diagnoses. Documentation of the actual face-to-face time spent with the patient is critical to this type of coding. All actual face time, including that spent on the history and the physical examination, may be counted, but this method of coding must include a statement in the medical record that notes the total face-to-face time, confirms that greater than 50% was spent in counseling, and documents the nature of counseling (management options for treatment of a newly diagnosed prostate cancer, medical and surgical options for benign prostatic hyperplasia, etc.). The elements for history, physical examination, and medical decision-making do not need to be reached for a particular level of coding if time is used, but honest measurement of time spent with the patient and the proportion actually used for counseling is a must.

The explosion in the use of an electronic medical record (EMR) for documentation has had a profound impact on the practice of medicine and warrants a mention

in the context of coding and billing. The use of templates, for example, may allow a provider to rapidly and efficiently complete documentation for an E/M visit and reduce the reliance on memory to make sure all elements of the history and examination are completed. Assigning an E/M code to each encounter can be quickly completed through the EMR, and this can speed up the process of billing to payers. However, use of the EMR is also fraught with the potential for abuse and fraud. Information imported from other sources without actually being obtained from or reviewed with the patient should not be counted in the elements of the history. Prepopulation of physical exam findings in a template note risks inclusion of parts of a physical examination that were not actually performed. Cutting and pasting of elements of the history, physical examination, and assessment/plan from a past note into a current note must be avoided at all costs. Use of time references such a "yesterday" or "last week" that can lead to inaccuracies in a copied note rather than an actual date within an HPI make it obvious to an auditor that the note in question was not generated from a current discussion with the patient and therefore not acceptable for counting towards the level of service for a visit. Obviously, the use of an EMR will remain a critical tool for essentially every urologist entering practice, but one must balance its speed and convenience for documentation with the risk of profound challenges in accurately determining the appropriate level of service for an encounter based on what was actually discussed and performed.

Procedure Codes

A different language is utilized to accurately denote procedural work done in the operating room or the office setting. Current Procedural Terminology (CPT) codes represent a system for identifying interventions done and submitting a request to payers for payment of such services. These codes are maintained by the American Medical Association, and they are updated yearly. Obtaining the yearly book listing all such codes is critical to be able to accurately bill for surgical services provided. The CPT codes are five digit codes, and nearly every service provided by a urologist or another health care provider in other specialties will have its own individual CPT code. One must find the CPT code or codes that most closely resembles the procedure done. Unfortunately, there may be unique situations where a service is provided that does not necessarily fit into any currently available code. This represents one of the most challenging situations in the realm of coding and billing.

Bundling

A frequent occurrence in procedural coding is the fact that many procedures may be bundled into another CPT code for a more extensive or complicated procedure. This prevents overcharging for doing a procedure that is actually an essential component

of a more complex procedure. For example, cystoscopy has its own unique CPT code. Transurethral resection of bladder tumor (TURBT) also has its own CPT code (in fact, there are several codes based on the size of the tumor being resected). When one performs a transurethral resection of a bladder tumor, a thorough cystoscopy is certainly performed first at the time of surgery to confirm the size and number of tumors. However, the CPT code for removal of the bladder tumor has cystoscopy bundled within it, and therefore, one would only submit the CPT code for TURBT rather than two separate CPT codes for both procedures. Examples of this situation are innumerable and must always be kept in mind when choosing the appropriate CPT code for services rendered. Adding to the confusion, there are certain circumstances when a procedure may be "unbundled" from another CPT code and billed for separately depending on a particular clinical scenario. The rules governing this change frequently, and thus it is essential that a urologist commits to continuing education regarding coding in order to prevent committing fraud or failing to achieve the maximum reimbursement for services provided.

Global Services

The concept of the global service is for a payer to combine all the payments for a particular service into one generalized payment to cover all the work necessary for that procedure. For example, rather than allowing a provider to bill individually for the preoperative visit, the surgery itself, and each individual postoperative encounter done in the hospital or the office, it may be more efficient and cost-effective for the payer to incorporate the reimbursement for the pre- and postoperative care into the charge for the surgery. Global periods can be 0 days, 10 days, or 90 days. The complexity of a surgical procedure will obviously determine into which of these global periods it will fall. For example, a ureteroscopy for a ureteral calculus has a 0-day global period. A urologist may therefore submit an E/M charge for a preoperative visit, the CPT charge for the procedure itself, a CPT charge for a cystoscopy and stent removal a week after the procedure, and E/M charges for any office visits related to the calculus or other urological concerns any time after the primary surgical procedure. However, a radical prostatectomy would have a 90 days global period, and therefore all preoperative and postoperative work for 90 days after surgery related to the prostatectomy is included in the reimbursement for the CPT code for the surgery and may not be billed separately. An E/M visit that occurs within the 90 days global period that is used to address a urological problem separate from the prostatectomy may be billed when notated with the proper modifier. The global period for any particular CPT code may be found through the website for the Center for Medicare and Medicaid Services.

Modifiers

A modifier is a series of numbers or letters attached either to an E/M level of service or a CPT code to allow a provider to indicate that there is some alteration in the specific circumstances related to the code, but without changing the essential nature of the service provided by that code. This improves accurate communication of the specifics of the actual care delivered and the timing of the delivery of the care. It may improve reimbursement for services provided or prevent denial of payment for services that were in fact appropriately documented and delivered. For example, a commonly used modifier that is applied to E/M services is the 25 modifier. This allows a provider to bill for a separately identifiable E/M service that is provided on the same day as a procedure. Billing for an E/M service provided on the same day the decision to perform a surgery with a 90 days global period can be accomplished by adding modifier 57 to the E/M level of service. Modifiers applied to CPT codes are more numerous and more often utilized to improve the accuracy of the surgical intervention. For example, there are modifiers that notify that a procedure was performed in a bilateral manner or on two separate structures on the same side of the body (ureteroscopy and laser lithotripsy on calculi in both the ureter and kidney would be such a case). Modifiers can help to unbundle a separately billable code when appropriate or identify when a procedure is done in a staged manner or is an unplanned procedure completed within the 90 days global period for the original surgery. Modifier 51 notifies payers that multiple procedures were done during the same operative session by the same physician. If a particular case requires increased work time or procedural complexity, then modifier 22 may be added to the CPT code to request increased reimbursement for the increased procedural service. Modifier 52 notes reduced services and may be utilized when a procedure is started but not completed, for example. Obviously, knowledge and proper employment of modifiers is critical to seeking proper reimbursement given all the complexity and nuances to the work done by a practicing urologist.

ICD-10 Codes

All the care provided by a urologist must have a reason that the service was rendered, and the ICD-10 code is the language that allows the most accurate description of the diagnosis or symptom being treated. These codes are found in the International Statistical Classification of Diseases and Related Health Problems 10th Revision. This is provided by the World Health Organization and is published yearly. Every E/M visit and each CPT code must have an associated ICD-10 code to identify the reason for the encounter or surgery. These codes allow for very detailed specificity, and accurate coding and billing depends on using the most appropriate code for the service. If a definite diagnosis is not determined yet at the time of service, one should associate symptoms instead.

Just as a medical student may initially be overwhelmed with the plethora of new terms for anatomy, physiology, and pharmacology when entering the field of medicine, the language of billing and coding may be similarly confusing and foreign to a urologist just entering practice. However, with repetition and proper continuing education to stay up to date, the provider may become just as adept at this necessary aspect of medical care as providing surgery and medications.

Coding Resources

The exact manner in which a urologist goes about the daily task of coding and billing for his work will vary greatly depending on the nature of the practice setting in which he/she performs such work. In a large, multispecialty group practice, a team of coders may be employed by the practice to perform essentially all the tasks of coding and billing, and the physician's role may be relatively limited beyond providing the actual medical care and documenting it accurately. In a single-specialty private practice setting, the urologist may be determining the level of E/M service for every patient seen and providing the CPT code for every surgery performed. Other settings may have a combination of provider input to coding with oversight and auditing by coding specialists. In each case, however, I believe it is critical for a urologist to have a good working knowledge of this topic to make sure he/she is being properly paid for the work being done, minimize the risk of fraud occurring in his/her name, and being able to have an informed and productive discussion with coders and payers when disagreements arise.

Coding Staff

If one is going to rely on others to do the work of coding and billing, then it is imperative that they have the appropriate expertise to do it effectively. A medical coder must have some understanding of anatomy and physiology as well as medical procedures in order to be able to accurately assess office visit notes and surgical reports. They must be knowledgeable in the most recent changes to the coding landscape and have the ethical foundation to identify any potentially fraudulent acts. The American Academy of Professional Coders (AAPC) provides education and certification of professional coders. Hiring coders designated as certified professional coders through this organization may help to ensure the proper level of skill and commitment necessary for optimal practice.

Working with the coding staff to identify a compliance plan, perform routine audits to quickly identify any coding or documentation errors, correct billing errors when found, and have a clear channel of communication between patients, payers, physicians, and the coders are all essential elements to have a functioning urology practice. Investing in continuing education for the coders through

attendance at seminars and conferences is a critical way to optimize their skills and knowledge. This should be done yearly as many new codes and rule changes are implanted on a yearly basis. Providing access to the most up to date manuals and online resources also helps the coders to do their job most effectively.

Physician Resources

The practicing urologist can acquire the skills and knowledge necessary to be an effective coding resource in a number of ways. Books and manuals, online resources, and conference attendance all play a vital role in maintaining effectiveness in the business of medicine [1–3]. A physician must apply the same level of interest to this aspect of the practice as he/she does to journal reading and conference attendance to continue providing excellent and contemporary medical care to the patient population.

Reference manuals that should be obtained yearly include the latest CPT book, ICD-10 manual, Healthcare Common Procedure Coding System for being able to report services for supplies and drugs, and National Correct Coding Initiative to stay up to date on bundling edits. The wall chart and pocket card to determine appropriate E/M level determination should be readily available as a reference.

The American Urological Association (AUA) provides several services to urology practices that are an invaluable resource for handling difficult coding challenges and maintaining proper knowledge of this topic. The AUA Coding Hotline allows an online or telephone interaction for access to professional coders at the AUA to help with particularly challenging coding situations. AUA Coding Today is an online subscription product developed by Physician Reimbursement Systems and cosponsored by the AUA. This service provides CPT and ICD-10 codes, current bundling edits, information on global days and modifier usage, AUA coding tips, and even local coverage decisions. The AUA holds an annual coding seminar that provides an intensive education in the basics of coding as well as critical updates that can affect a urology practice. It is designed to benefit both coders and physicians. I believe it is critical for every urologist to attend this early in his/her career to gain an appreciation for the complexity and depth of this topic. While a young physician may be overwhelmed and confused at the first attendance of this meeting, yearly attendance reinforces critical elements to the coding and billing process and allows the development of expertise to be brought back to the practice.

Coding and billing talks are also part of many urological continuing education conferences and should be attended with the same enthusiasm and attention as talks on urological oncology or other conditions. I have found presentations by Dr. Ray Painter and Dr. Michael Ferragamo to be particularly helpful and accessible for a novice in coding and billing. The PRS Network also presents coding seminars for a fee that provides yet another in person resource for additional education.

Conclusion

While proper coding and billing may be given little attention in urology graduate medical education, it is critical to the success of any urological practice. A solid grasp of the fundamentals of this topic combined with a commitment to pursue ongoing education should allow a urologist to obtain proper reimbursement for work done and minimize the risk of committing fraud and abuse.

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Helpful Coding and Billing Websites

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2. www.auacodingtoday.com.
3. www.prsnetwork.com.
4. www.rvsdata.com.
5. www.cms.gov.
6. www.ama-assn.org.
7. www.aapc.com.
8. www.who.int.

Chapter 12
Time Management

Aaron A. Laviana and Sam S. Chang

Introduction

> "He who know most, grieves most for wasted time."
>
> —Dante [1]

It is almost impossible to encounter someone who does not feel at some point that he or she has too much to handle and/or not enough time to get it all done. From the provider tasked with making dozens of calls and e-mails after the office closes while simultaneously completing electronic medical charts, completing insurance paperwork, and reviewing test results to the staff having to handle the inadequate standard appointment time of fifteen minutes (think about someone's great grandmother having to walk back to the room, settle in, and explain what she is here for in that too-short time frame) to the nursing manager having to handle 100-plus e-mail requests per day; everyone is flooded by what seems like an innumerable number of "urgent requests." Interestingly, a paradox has also developed over the new millennium. People have made attempts to enhance their quality of life, but frequently add to their stress levels by taking on more than they have the time and/or resources to handle [2]. This self-imposed increase in responsibilities frustrates and antagonizes an already perplexing situation. A survey of almost 7 million people in the United States revealed that Americans reported substantially higher levels of depressive symptoms, particularly somatic symptoms, in the 2000s–2010s versus the 1980s–1990s [3].

Aaron A. Laviana, MD was supported by the Paul Calabresi Career Development Award for Clinical Oncology (PCACO) K12 (NIH Institutional Research Career Development K12 grant mechanism).

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_12

Improving time management is believed to decrease stress, and improve efficiency, clinical effectiveness, and patient care. As Benjamin Franklin first attested 250 years ago, “time is money [4].” This concept is as salient as ever today, and as urologists we must have a firm grasp on good time management skills in order to maximize success in all facets of life. While there is no universal solution, seminar, or app that will improve every ones’ time management, there are ways to facilitate improvements in personal productivity and organization; and with this are some simple processes that everyone can use to maximize output and minimize input in a world where work is increasingly volume-centric. The purpose of this chapter is to focus on methods to increase one’s self-awareness of time management while discussing techniques to more effectively prioritize tasks in order to achieve as healthy a work–life balance as possible.

Background

The desire for improved efficiency and time management is far from novel. The earliest measurements of time trace back to pre-sixteenth century BC when there was basic understanding of sunrises, sunsets, and seasonal changes [5]. The idea of time slowly reformed over the ensuing centuries with St. Benedictine Monks being the first known individuals to schedule daily activities at particular times of the day in the sixth century. Nevertheless, arguably the most formative pendulum shift occurred during the Industrial Revolution in the eighteenth and nineteenth centuries. John Letts produced the first commercial diary in 1812 to provide local merchants and traders with a way to track tides and record financial transactions [6]. Shortly thereafter, wristwatches and time clocks were developed, which placed even a stronger emphasis on time. These pivotal inventions eventually paved the way for the creation of the assembly line by Ransom Olds and Henry Ford. By assigning specific roles and tracking times, the assembly line substantially increased productivity by decreasing the car assembly time from 12.5 to 1.5 man-hours. This success was a major driver in Henry Ford’s decision to decrease the workday from 9 to 8 h while doubling pay from $2.25 to $5 per day [7]. Similar trends and improvements in time management were seen across industries, and eventually the first book on this topic was written by James Mckay in 1958 [8]. Since then, countless books have been written on time management, each focusing on some element of time analysis, planning, goal setting, prioritizing, and scheduling. Implementing all of these strategies at once is not feasible, but successful adoption of one or two may prove fruitful over the long-run. The remainder of this chapter focuses on a few of these techniques often utilized in medicine and in business.

Set Compelling Goals and Eliminate Waste

Despite a plethora of self-help books and available material on this topic, none of these techniques will work unless a person is motivated to use them. Importantly, many people who struggle to manage their time effectively will not want to take the additional time to read advice, and as such, effective time management is as much psychological as it is incorporating tangible methods. In truth, one must stay highly motivated to maintain an organized approach to work, especially when encountering time constraints, requests, e-mails, calls, interruptions, and unexpected roadblocks [9].

In order to obtain this consistent motivation, compelling goals are needed. These include long-term and ambitious goals such as being the chair of a department by 2020 and short-term goals, such as blocking away enough time during the day to complete all clinic notes without having to do any at home. We all need that psychological push to maintain discipline with regard to scheduling and planning. Therefore, we should strive to create goals that create excitement and energy [10]. If not, one must strongly think about why he or she is setting that goal. We have to remember it is okay to say no, and eliminating "waste," or tasks that do not achieve particular goals, often creates greater satisfaction for people in the long-run. When one is finally able to focus on compelling goals while not getting bogged down with what may feel like meaningless tasks, motivation improves, as does productivity.

Lean Management

Adopted from industry, lean management has jumped to the forefront over the last decade as a service improvement technique in healthcare circles [11]. The overall premise is to identify and eliminate wasted resources, especially wasted time, by splitting up daily activities into three primary categories: (1) value-adding activities or ones that transform the service you deliver in order to meet the needs of your patients; (2) non-value-adding activities or ones that take your time and resources but do not add any value to the services you provide in the eyes of the patient; (3) necessary non-value adding or activities that have to be carried out because they enable a value-adding activity or are a statutory requirement. Ultimately, waste is any non-value-adding activity and a poor use of time [12]. One of the largest time-sinks for providers is wasted time spent waiting for people, documents, responses, or unnecessary travel while at work. In addition to trying to minimize these wastes, it is important to try to fill this time with short, easy-to-complete tasks such as responding to e-mails or making phone calls to avoid getting further behind.

Creating Organization

A lot of the need to improve quality and deliver more efficient care stems from an organizational level. However, personal approaches to time management are essential, and creating well-constructed to-do lists can have a tremendous impact on minimizing a person's wasted time throughout the day. Nevertheless, these time management techniques can only develop in conjunction with other management skills such as priority setting, assertiveness, and delegation.

While to-do lists are all but essential in today's world, they are not effective on their own as a mere collection of random thoughts. These lists need to be prioritized, and as such, each item needs to be reviewed and ranked with regard to its priority. Furthermore, can the task be done by only you and does it have that sense of "must be done now" attached to it? President Dwight Eisenhower was one of the first to develop a personal time-management system that divided tasks into 4 categories [2, 5]. This was later modified by Stephen Covey, arguably most known for his book "The 7 Habits of Highly Effective People." In this book, he considers theoretically placing each task into one of four quadrants, in essence prioritizing every aspect of work. Having sequenced these tasks into an order of priority, each person must then make a commitment to action them [2, 5]. These categories can be modified to apply to urology. Quadrant 1 tasks are high urgency, high importance tasks including: urologic emergencies, urgent clinic needs/patients, necessary and important meetings, deadline-driven projects and last-minute preparations for scheduled activities. Quadrant 2 tasks are low urgency, high importance tasks: preparation/planning, wellness activities (exercise, social), grant writing, personal/career development tasks, research responsibilities, preparing chapters. Quadrant 3 tasks are high urgency, low importance tasks: interruptions (pager going off, covering tasks for colleagues, being asked to cover something just because you were walking through clinic), some mail and reports, some meetings, many "pressing matters." Finally, Quadrant 4 tasks are low urgency, low importance tasks: many e-mails and phone calls, time-sinks (social media, mindless television/internet), busywork, escape activities.

Ultimately, consultants and trainees who spend the majority of their time working in quadrant 1 face burn out as they jump from one emergency or crisis to the next. The most effective people stay out of quadrants 3 and 4 and minimize the amount of time they spend tackling projects in quadrant 1. Instead, they optimize the time they spend working on quadrant 2, which allows them to gain better control and balance in their lives.

Complete "Quadrant 1" Tasks First

Urologists and medical professionals need to avoid spending every day reacting to unexpected events and dealing with one crisis after another. Though unavoidable at times, this style often compromises a healthy work–life balance. Therefore,

once all quadrant 1 tasks have been identified, these should be dealt with first. One method of doing this is to set a half an hour aside each week to schedule time to write out the tasks for the week, allowing one to effectively plan for the days ahead [2]. In the modern era, an electronic diary can also be synchronized with family members to provide a clear view of your commitments. This includes adding in all regular commitments such as surgeries, rounds, clinic schedule, meetings, and any appointments. Also, it is critical to schedule in all quadrant 1 tasks as they must be finished in a timely fashion and should be focused on during the earlier part of the week, if possible.

When new to effective time management, it is also important to estimate how long one thinks a specific task will take and to schedule double that time. Poor time managers are notoriously erroneous when estimating the length of a task, and therefore, added time must be included until a person has a better idea of the true length of tasks [13]. By creating this habit of scheduling adequate time in your calendar for tasks on a weekly basis, these number 1 tasks will be more easily eliminated. It is also important to know what time of day and part of the week one is the most efficient and to always protect this time. Performing these tasks during so-called "energy peaks" will allow tasks to get done more quickly [5]. For quadrant 2 tasks, which are hopefully the largest number of tasks on one's list, these should be scheduled throughout the week (think of a talk to be made for next month). In the beginning, it is best to start small by scheduling only a few of these per week in order to not get overwhelmed.

Schedule Gaps in Your Day

For better or worse, unforseen events or emergenices will always interrupt the normal workflow of a day. Although unexpected, these can also be planned for by not scheduling every day with back to back meetings or appointments. Leaving gaps in every working day not only provides for breathing space but allows for the time to deal with something potentially unexpected [14]. Most importantly, this can alleviate stress by still allowing for all those unexpected quadrant 1 tasks to be completed.

Protected Time

We must always remember it is okay to be assertive and say no, as difficult for some as this may be. Therefore, while planning for organization is part of the equation, one must also protect their time. After one identifies when he or she is most productive, this person must also find ways to minimize interruptions that occur during this block. For example, during this protected time, one can ignore the telephone and/or set their e-mail inbox to "offline." If this protected time is

during the day, consider shutting the door and placing a note that says to only knock if it is an emergency. Furthermore, always have projects available that one can do in snippets of time. If one prefers to procrastinate or if a task feels so overwhelming he or she does not know where to begin, try breaking the task into smaller pieces that can be scheduled over a period of time. This "salami principle," or cutting big projects into slices, allows for consistent progress to be made each week in order to hit a deadline. By eating the slices one at a time, one will eventually consume the entire salami (i.e., project) [15].

Always Find Time for Yourself

Self-help on the NHS website states the aim of good time management is to achieve the lifestyle balance you want. This work–life balance is "achieved when an individual's right to a fulfilled life inside and outside paid work is accepted and respected as the norm, to the mutual benefit of the individual, business and society [16]." These benefits transcend all levels of the individual's life, given positive mental health is associated with decreased absences from work, a more positive work culture, and improved recruitment and retention. Altogether, benefits include improved job satisfaction and better satisfaction with family life, both of which can yield more energy and enthusiasm within the workforce. Perceived competence is also improved as well. Therefore, it is essential to find time to do those things you love outside of work.

One exercise that can help balance the multiple needs we all have is called the "wheel of life [5, 17]." This personal development tool allows for visual representation of one's life balance and is made up of eight sections (Fig. 12.1).

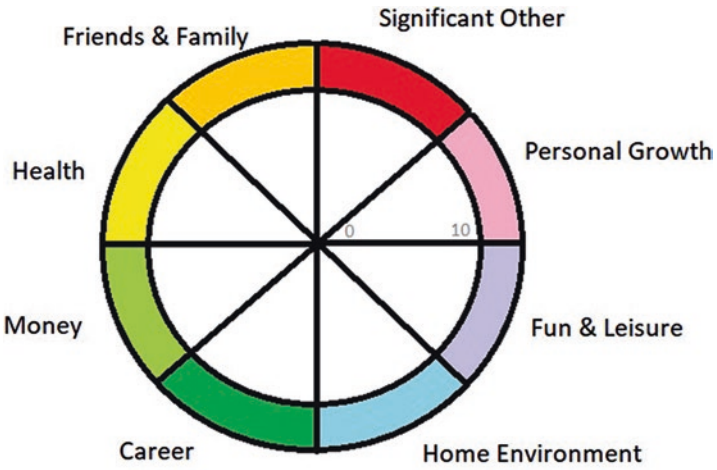

Fig. 12.1 The wheel of life

Instructions:

- Imagine a scale from 0–10, with a 0 at the center of the circle and a 10 at the periphery of each segment.
- Grade your current level of satisfaction with each segment by drawing a dot to create a new outer edge, then join each dot up to create a new perimeter. If you are very satisfied with a particular area of your life it would be rated 9 or 10 out of 10; if there are areas of your life where you have not accomplished what you want or it is not bringing the satisfaction you hoped for, give it a lower rating.
- The new perimeter of the circle represents your current balance wheel.

Reflective questions

- What did you score and why? Would this score have been consistent a year ago? Three years ago? And are we happy with these changes?
- Which segment do you feel needs to be improved the most? Is there one segment, that if improved, would result in others being improved?
- Ask yourself, what area/s do I want to improve the most on? Am I focusing too much time on one area?

Limiting Social Media and Unnecessary Internet Usage

The Internet undoubtedly speeds up staying in communication with employees, patients, and colleagues, and facilitates research, but its unnecessary use can present distractions for the workflow of an office [18]. In order to maximize efficiency, one must try to limit their use on social media and other websites of minimal value. One easy method to accomplish this is to monitor your online patterns to determine whether you are focusing on the tasks that matter most to the practice. Web-based time tracking and time monitoring tools can help track the amount of time spent e-mailing and frequency with which certain websites are visited. There are also ways to block visiting particular websites at work (Gmail, Facebook, Twitter, etc.) to further minimize unnecessary distractions [19]. A recent study by Michael Porter that tracked 27 CEOs over 3 months found these CEOs spent 24% of their time simply replying to e-mail, many of which were unnecessary. Resultantly, these CEOs were often pulled into the operational weeds when they did not need to be. As Porter stated, “E-mail interrupts works, extends the workday, intrudes on family and thinking, and is not conducive to thoughtful discussions. CEOs have to stay human and authentic, and you can’t do that via email.”

Additional Pearls

A constant complaint is that workers spend their days in a state of constant distraction and task switching. This results in people being busy but not necessarily productive. More than a quarter of the time when someone switches task, it is two hours or more before they may resume what they were previously doing. Altogether, these distractions take a toll. Employees who manage attention poorly are often in reactive mode, preventing them from being able to reflect and thoughtfully apply their knowledge or experience in a maximally efficient manner, the main reason they were hired in the first place [2]. Although everyone has a different set of ideas on how to maximize productivity, the following are a list of pearls we strongly abide by in order to maximize one's time.

Pareto principle (the 80:20 rule)

80% of one's time-consuming activities are generated by 20% of the causes, which usually stems from people or unresolved situations [20]. Here, it can be highly rewarding to invest the time to address a situation such as having that difficult conversation with the employee who is always interrupting your protected time to talk during the day. This principle also pertains to many other aspects of work including delegation, where it may prove beneficial to invest time in the training or development of someone to do some of your tasks. The same can be said of 20% of workers contributing approximately 80% of the results. By focusing on rewarding those high-performers and improving their retention rate, one can make drastic improvements.

Limit transition time

This pertains to the time spent commuting or waiting, as some people will spend substantial periods of their day walking from rounds to surgery to clinic to meetings. Without realizing it, this can greatly affect one's productivity. Therefore, finding ways to consolidate movement and the locations of meetings can help tremendously.

Keep the workspace clean and organized

Though it sounds simple, enjoying the aesthetics of your workplace can increase productivity by making one more inclined to work at a particular location.

Abide by the 4 "D's" of decision-making

- Does this task need to be done? If no, delete it
- Do I need to do it? If no, delegate it
- Do I need to do it now? If no, put it in your calendar for a future time/date
- Do it now. If the task has arrived and needs to be done now, do it as such

Batching

Dedicate blocks of time to similar tasks, i.e., e-mails and phone calls.

What Do We Do Every Day?

Every person needs to determine the best part of the day or night in his or her life that provides a block of time for focused completion of tasks. These tasks may be an upcoming book chapter, grant proposal, the annual Holiday letter, recommendation letters for colleagues, or medical charts. Scheduling in advance during that time to complete tasks for upcoming deadlines aids in completing tasks without the last-minute scramble that many of us have had to endure.

Taking time to speak and relax with friends and family every single day for at least a short period of time is essential to recharge one's batteries and improve focus on responsibilities for the remainder of the day. As part of this time, we strive to frequently exercise as physical health also serves to improve mental stamina and acumen.

When we multitask, the key is to perform all tasks effectively while avoiding doing a poor job at any of them. The importance of the tasks and what they require followed by balancing the attention and effort that the simultaneous tasks require is essential. While on hold with the patient's family, for example, we have that patient's electronic chart open to complete the operative note and complete various electronic signatures that are required.

Conclusion

As urologists and all medical providers can attest, the number of competing demands for our time is increasing more than ever, bringing good time management skills to the center of numerous training and coaching seminars. While there is not one general recipe that can be applied to everyone, the purpose of this review is to provide salient strategies that the reader may find applicable to adopt into their everyday life. As Stephen Covey eloquently stated, "By centering our lives on correct principles and creating a balanced focus between doing and increasing our ability to do, we become empowered in the task of creating effective, useful, and peaceful lives…for ourselves, and for our posterity [2]." None of us need to radically overthrow our organizational culture overnight. Instead, by adopting small and impactful changes over time, this can slowly lead to an improvement in organizational effectiveness, having a profound impact on quality of life.

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Chapter 13
Media and Social Media

Stacy Loeb

Types of Social Media Platforms

Public Platforms

Numerous public-facing social media platforms are currently available. Some of the most popular platforms include Facebook, Instagram, Twitter, YouTube and LinkedIn. Facebook is a social networking platform started in 2004, which allows users to post comments, share photos or videos, and send messages with other users. Instagram is a photo and video-sharing social network that was launched in 2010. Twitter is a microblogging platform which was launched in 2006, and allows users to communicate through short messages called tweets (originally limited to 140 characters, but subsequently increased to 280 characters). YouTube is a widely used video-sharing platform launched in 2005, and LinkedIn is a professional, business-oriented social network that was founded in 2002.

The major professional societies in urology, such as the American Urological Association and European Association of Urology, have a presence on multiple social media platforms (e.g., Facebook, Twitter, YouTube, etc.). Social media are also widely used by urological patients for a variety of reasons. For example, there are many communities on Facebook and other online discussion forums for patients and their families with a variety of urologic conditions (e.g., exstrophy, sexual dysfunction, genitourinary cancer). Many advocacy groups and foundations also have social media pages with patient education materials (e.g., Urology Care Foundation). The majority of urologists also actively participate in social media. A survey of American Urological Association members in 2013 reported that 71% had a social media account [1]. Facebook was the most commonly used social

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_13

media platform by urologists, followed by LinkedIn, YouTube, and Twitter. Other social media platforms (e.g., Pinterest, Snapchat) are less commonly used in the field of urology.

Platforms for Healthcare Professionals

In addition to the public-facing platforms described above, there are several social media platforms specifically for healthcare professionals. One of these is Doximity, which allows physicians and other healthcare professionals (e.g., nurse practitioners, physician assistants) to create their own profile and to network with each other. The Doximity app also offers other services for healthcare providers, such as a news feed with relevant articles, tracking of continuing medical education activity, a secure fax, and the "Doximity Dialer" to facilitate calling patients back from outside the office. In addition, Doximity currently serves as the exclusive provider for online physician surveys used in U.S. News and World Report. Sermo is another social media platform directed at physicians. The goal of Sermo is to connect physicians with the support and wisdom of their peers. It has several different features including medical news, case-based discussions, polls, and drug ratings. Sermo also offers paid surveys for physicians for medical market research.

Urology-Specific Social Media Guidelines

There are multiple social media guidelines and best practice statements specific for urologists. Before engaging with social media, it is recommended that all urologists and trainees familiarize themselves with these recommendations to ensure appropriate use according to professional standards.

One of these is the Social Media Best Practices by the American Urological Association [2]. The key points are to be professional, courteous and thoughtful; to protect confidentiality and exercise discretion; to allow for interaction; and to support the identity of the AUA.

The British Journal of Urology International (BJUI) also has guidelines on Engaging Responsibly with Social Media [3]. They recommend always considering that your content will exist forever and be available to everyone. If you are a doctor, you should identify yourself; however, you should state that your views are your own if your institutions are identifiable. You should also maintain a professional boundary between you and your patients, and protect patient privacy and confidentiality at all times. Your digital profile and behavior online must align with the standards of your profession, you should avoid impropriety, disclose potential conflicts of interest, always be truthful and strive for accuracy. They also recommend not to post content in anger and to alert colleagues if you feel they have posted content which may be deemed inappropriate for a doctor.

The European Association of Urology recently issued updated Recommendations on the Appropriate Use of Social Media, including 10 key points: (1) Understand how other users behave online before interacting on social networks; (2) Establish and maintain a professional digital identity that is in line with your professional practice and goals; (3) Never undermine your patients' privacy or confidentiality; (4) Avoid providing medical advice and maintain limits between yourself and patients; (5) Assume that anything and everything you post is permanent; (6) Use instant messaging services with care; (7) Exercise professionalism; (8) Beware of social media policies set by employers; (9) Beware of how advertisement and self-promotion will be perceived by others; and (10) Use disease-specific hashtags for structured online communication [4]. Many other medical societies have guidance regarding online behavior, and it is also important to familiarize yourself with the policy at your own institution prior to active use.

Benefits of Social Media

There are many ways in which social media can benefit the practicing urologist. In a 2014 survey of users participating in Twitter during the AUA and EAU meetings, 97% of respondents agreed that Twitter is useful for networking [5]. In addition, 96, 75, 74, and 62% of respondents agreed that it is useful for disseminating information, research, advocacy, and career development.

Clinical Practice

Social media are a useful way to advertise your clinical practice. Many individual urologists, urology practices, academic departments, and hospitals have a presence on social media (e.g., Facebook pages, YouTube videos, etc.). Particularly in light of a large number of third-party websites with ratings of physicians, it is important to monitor your online presence on an ongoing basis. Individual pages on Facebook, Twitter, and other public-facing social media platforms typically rank highly in online searches, and therefore maintaining an active presence can increase the probability that your own content appears at the top of a search.

For urology departments, greater Twitter activity (e.g., more followers and higher Klout scores) has a significant correlation with U.S. News and World Report reputation scores [6]. Although it is not possible to establish a causal relationship, it seems likely that social media promotions can enhance the reputation of urology departments and individual urologists.

In addition, social media are also being used by individual urologists for crowdsourcing of cases. Recent publications have demonstrated the use of social media platforms to discuss specific cases, leading to actual changes in patient management [7]. A 2014 survey of active urological Twitter users reported that

44% of physicians agreed it was useful for clinical decision-making and 33% had made a clinical decision after a Twitter discussion [5].

Research

Social media can be used at multiple stages of research in urology. First, it may be used for research recruitment. Numerous studies have used social media platforms such as Facebook and Twitter for recruitment of patients and/or healthcare providers for research studies. Social media can also be used as a source of data for research. For example, previous studies have used Twitter data as a barometer for public interest and sentiment about particular topics, such as major changes in clinical guidelines [8]. Other studies have examined the quality of information about urological conditions being shared on social platforms (e.g., YouTube) [9, 10].

Finally, social media is a useful tool for research dissemination. All of the major journals maintain an active presence on social media. Some urology journals, such as *European Urology* and the *Journal of Endourology*, request authors to write a tweet about their paper as part of the submission process. This can later be used to promote the dissemination of papers once published, which is beneficial for both the researchers and the journal.

Due to the importance of online research dissemination, many journals have recently begun converting the key points of new publications into "visual abstracts" that can be readily shared on social media. Studies in the surgical literature have demonstrated that tweeting a visual abstract significantly increases the reach of tweets and the number of article visits, compared to only tweeting the title of new papers [11].

Studies have shown that having a Twitter presence is associated with impact factor for urological journals [12], and is associated with citations for individual urology papers [13]. It seems logical that greater social media activity surrounding a publication helps to spread the research among a broader audience, thereby increasing the potential for citations and hopefully also increasing the probability that the evidence therein will positively impact patient care.

Education

Social media can also be a useful source for education. A survey of urology trainees in Europe revealed that YouTube was the preferred platform for learning about surgical technique, more so than textbooks or journal articles [14]. Although these platforms can be extremely useful to share educational content with a wide audience, quality control is extremely important. For example, a previous study of

YouTube videos about mid-urethral slings found that many were missing key steps of the operation [10].

Social media are also widely used at urological conferences. It is possible to follow along with conference proceedings through the dedicated social media feed. Although some content about urological conferences is frequently posted on multiple different social platforms (e.g., Facebook, LinkedIn), Twitter provides the most expedient platform to follow the proceedings in real-time. Each of the major urological meetings has its own hashtag (or metadata tag), which is typically an abbreviation combining the name of the meeting and the year (e.g., #AUA19, #EAU19). Some conferences also have physical Twitter boards in public areas, or screens on the podium showing the Twitter feed so that moderators can incorporate questions from viewers into the discussion. Since many conferences have multiple sessions occurring simultaneously, following the conference hashtag on Twitter can provide a useful supplement to the experience. Social media also enables remote participation in conferences for those who cannot attend in person. In a 2014 survey of urological Twitter users, 76% indicated that they had followed a congress remotely [5]. In this way, social networks can enhance the conference experience and facilitate global sharing of knowledge.

Social media are also a useful way to stay up-to-date with clinical practice guidelines. Beginning in 2014, the European Association of Urology Guidelines Office initiated a project to convert the key points from all of its urology guidelines into tweets for public dissemination [15]. During the first 18 months of this experience, tweets about the EAU guidelines reached an audience of >9 million. This demonstrates the potential for social media to promote evidence-based practice in urology. There are also multiple Twitter-based journal clubs which allow global discussions of important new research [16]. The first of these efforts in urology was the International Urology Journal Club (#urojc). Since that time, other Twitter-based journal clubs have been initiated such as the Pediatric Urology Journal Club (#pedurojc) and Prostate Cancer Journal Club (#prostatejc).

Finally, social media can be used for patient education and outreach. As described above, many urological patients are using social media platforms to network with each other and discuss healthcare. Involvement in social media provides a vast audience for urologists to contribute to public education and engage with patients. For example, some urologists maintain blogs with educational information for patients, which can also increase visibility and help to recruit new patients to your practice.

Drawbacks to Social Media

One of the pitfalls of social media as a source of information is that there is a large quantity of user-generated content that has not been vetted. Previous studies have evaluated the quality of online information about various urological conditions on

social media, with sobering results. A recent study examined the top 150 YouTube videos about prostate cancer and found that 77% contained potentially misinformative or biased content in the video itself or the comments section underneath it [9]. Concerningly, there was a significant inverse relationship between the expert-rated scientific quality of the videos and the amount of user engagement (i.e., lower quality videos had a greater number of views and thumbs up from viewers). Studies of online content about other urological conditions have similarly reported the presence of misinformative content [10]. To help mitigate this, urologists should recommend trusted resources for patients and their families to obtain additional information outside the medical encounter. In addition, urologists should actively participate in social media and post high-quality content to help raise the signal above the noise.

Another potential risk of social media for urologists and other healthcare providers is professional misconduct. Studies of urology trainees and junior faculty have documented the presence of unprofessional content on publicly visible Facebook pages [17]. Although there are several urology-specific codes of conduct, only 65% of active urological tweeters indicated that they were familiar with these guidelines in a 2014 survey [5]. It is particularly concerning that the proportion was so low among individuals who were already actively participating in the urological Twitter discourse. The importance of following these recommendations cannot be understated and all urologists planning to use social media should review them.

Finally, excessive social media participation can have other psychological and physical consequences. In fact, social media disorder is now recognized as an emerging mental health problem, leading to the development of multiple scales to measure addiction to social media [18]. In terms of physical impact, most urologists view social media using smartphones. Excessive time bending over a smartphone in a forward flexed neck position may lead to musculoskeletal problems including increased neck pain (“text neck”) and possibly a greater risk of disk degeneration [19]. Overall, moderate use in accordance with professional guidelines is the best approach to maximize the benefits and reduce risks.

Conventional Media

Practicing urologists may also be interested in becoming involved with conventional media, such as TV, radio, or print media. To get started, consider your goals and what you hope to accomplish through media involvement (e.g., public education, advertising for your practice, etc.) and the type of media that you would like to participate in. If you work for a hospital or university, contact the media department at your institution to express an interest in getting involved. Some physicians also work with a publicist to help increase their exposure and book relevant media opportunities.

If you have important information to share, you (or your publicist) can make a pitch to producers/editors at the desired media outlets. A pitch can be done

through email, briefly summarizing your relevant expertise and what you can uniquely share with the audience. Participating actively in social media is also a great way to connect with the media organically.

For urologists involved in scientific publications, it is important to maintain an ongoing relationship with the media department at your institution about works in progress and keep them notified well in advance if an important research paper will be published. If the findings hold great public interest, the media department can issue a press release, which will greatly increase the visibility of your research. It is important to carefully review the content of the press release, since excerpts from this are often shared by multiple media outlets. When contacted by the media to participate in an interview, it is important to respond promptly to these inquiries. For live or taped interviews with public-facing media outlets, remember to use lay language and avoid medical jargon. For print media, there are often strict deadlines so it is important to provide the desired content in a timely fashion. Producers, editors, writers, and hosts will remember experts who do a great job and respond promptly. These relationships are essential for urologists seeking repeated, ongoing media opportunities.

Take Home Points

- Social media are widely used by medical societies, healthcare providers, patients, and other stakeholders.
- There are multiple public-facing social networks as well as platforms specific to healthcare professionals.
- The majority of urologists have a social media account.
- Social media has many potential benefits for clinical care, research, and education.
- Social media has potential risks including spread of misinformation and professional misconduct.
- Urologists should review the professional guidelines on social media prior to use.
- Maintain an ongoing relationship with your institution's media department to identify potential opportunities.
- Respond to media inquiries promptly and avoid using medical jargon during interviews.

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Chapter 14
Burnout, Happiness, and Work–Life Harmony

Granville L. Lloyd and Sarah E. McAchran

Introduction

How can one achieve success, in urology or anything, and still preserve "balance" in life? Is balance a goal that is commensurate with success, or are the two inherently at odds with each other? Can one achieve success in urology without making sacrifices? How can my career best be used as a vehicle for happiness, fulfillment, and self-expression?

For all of us that survived residency, it is clear that sacrifice and hard work are required to achieve basic competence, let alone success. Those that continue to pursue success after such an ordeal, whether via the endless work of academics or the high-volume grindstone of a busy private practice would never deny the hard work required. To quote Dean Simonton, a psychology professor who has studied success at length: "People who wish (success) must organize their whole lives around a single enterprise. They must be monomaniacs, even megalomaniacs, about their pursuits. They must start early, labor continuously, and never give up the cause [1]."

If that sounds awful… well, that's why you're here. Is the goal of life, start to finish, to merely survive? To claw one's way through Maslow's hierarchical needs? To make a lasting contribution and see your statue erected at your home institution? To laser a couple of stones and make it to the club by 3? Those goals, such as they may be, need to be identified and pursued differently in each person, and yours probably vary more from the person in the next office than you suspect.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_14

But where does work fit in to that for you? Is "work" really something counter to "life" such that one needs less of one to achieve the other? To achieve balance?

This chapter argues no. Work, if nothing more than a means of managing that pesky mortgage bill that arrives each month, sounds mundane at best and awful on average. You have chosen a profession, an art and science; a calling: fight to prevent it from deteriorating into less. Work devoid of meaning and purpose leads to burnout. The Maslach Burnout Index (MBI) assesses three distinct components of burnout: emotional exhaustion, depersonalization, and personal accomplishment/experience of ineffectiveness [2]. Aside from the personal, psychological toll burnout takes, burnt out physicians are associated with decreased quality of care, decreased patient satisfaction, increased medical errors, and increased staff turnover [3].

Along with teaching and law, medicine is one of the "noble professions," and as such has the chance to achieve that holy grail of work: personal meaning and fulfillment. When you are able to connect to work, or to craft work to connect to your inner satisfaction pathways, then happiness, health, and longevity are all measurably improved. People reported to Gallup Polls that when they are able to work in a fashion that is based on their strengths, they are three times more likely to report an excellent quality of life and six times more likely to be engaged with their work. Montessori schools, monasteries, and places where people "consider their work as a calling rather than a job" are virtually devoid of burnout [4].

So how can one find a way to work and live that they're engaged with, while avoiding the perils of burnout as described above? We don't claim to have the single magical answer but hope this chapter will provide some useful strategies with which to approach the challenge we all face.

Burnout

Physician burnout has been described as both a public health crisis and an epidemic. It is rising in prevalence among all physicians, and has been found to exist at a very high level specifically among urologists, as illustrated by recent data suggesting nearly 40% of urologists are currently meeting burnout criteria [5]. First described by Dr. Herbert Freudenberger in his 1980 book Burn Out: The High Cost of High Achievement, a person with burn-out is "overcome by fatigue and frustration which are usually brought about when a job, a cause, a way of life, or relationship fails to produce the expected reward [6]." Further, those who suffer burn out are usually high achievers.

While burnout among physicians is a relatively new phenomenon, it has exploded into awareness and is accurately described as a public health crisis. A 2019 report published by the Harvard T. H. Chan School of Public Health, the Harvard Global Health Institute, the Massachusetts Medical Society and Massachusetts Health and Hospital Association suggests the origin of this crisis can be in part traced to the 1999 publication of the Institute of Medicine's "To Err

is Human" report, which ushered in a new era of medicine with a newly heightened regulatory focus on physician practice, quality, and accountability [7]. This new direction went on to create a field dominated by "rewards, punishments, and pay for performance." Burnout stems from the disconnection between the noble and caring profession that physicians thought they were signing up for, and the content of their day-to-day practice.

The consequence of this attention to all-new ways of trying to herd physicians toward "better" practice has been a significant loss of autonomy and the addition of new extrinsic demands, mostly for documentation of various sorts. The great majority of these new stresses are enacted through the bane of contemporary practice: the electronic medical record.

Frustrations are integral to life and work, but frustrations that exist beyond our control, such as those that may come from disconnected management or corporate failure, may lead to deep unhappiness. Fully expressed, this sacrifice of control can be similar to "learned helplessness" (LH), a biologic model of the interface between control, the inability to exert control, and depression. LH has been shown to create 8 of the 9 criteria for depression as expressed in the DSM9, where just 5 are required to meet the diagnosis of clinical depression [8]. Thus, inability to exert control when severe or important enough can lead to elements of depression and is a key component of burnout.

Change is necessary. Retaking control is necessary. While there are individual skills and methods that one can employ to minimize the negative effects of this loss of autonomy and increase in administrative and electronic medical record (EMR)-base demand, laying the responsibility for burnout management at the feet of the practitioners has been aptly compared to telling drivers to wear seatbelts instead of repairing dangerous roads and broken stoplights [7]. We break strategies preventing/combating this crisis into two categories:

1. Things you cannot change alone (but should strongly advocate for) = Systemic Change.
2. Things that you can change about yourself and about your work = Self Change.

Systemic Strategies

It is said that every system is perfectly designed to get the results that it gets. We seem to have a system that is designed to burn out 50% of its workforce. In a response to this, the Massachusetts/Harvard report makes three initial recommendations, all of which address system-level deficiencies:

1. Aggressive availability and integration of physician help services into the practice environment.
2. EMR reform/changes in how billing, documentation and the interface between patient care and documentation occurs.

3. Institutional-level creation of a Chief Wellness Officer: a person responsible for the health and wellness of the physicians at each institution.

To achieve these changes, physicians must be actively engaged and participatory. You have to advocate on your own behalf. If there is a meeting about physician wellness, go to it. If you there is a ballot regarding the Chief Wellness Officer, cast your vote. If there are physician help services available to you, learn how to access them when needed. As an individual physician at a large institution, it can be easy to have a learned helplessness attitude toward system changes, but that is an attitude that champions the status quo.

Self Strategies

While we feel that active engagement and support of the systemic changes outlined above by all physicians are both critical to the change we need, there are things you yourself can do to prevent and combat burnout. We further subdivide these into those that are specifically job related and those that are more global in nature.

EMR Management

We expect that virtually all readers will recognize the demands made on our practice by electronic documentation and administrative tasks. In a study published in 2018, electronic documentation tasks and burnout are closely related and this relationship likely surprises no practitioner [9]. A separate survey in the Journal of the American Medical Association identified the EMR as physician's number one "pain point," and in some settings physicians spend literally twice as much time interfacing with their EMR and documentation needs as they do with patients [10, 11]. This is flatly not why any of us went to medical school. However, In addition to supporting and encouraging the systemic change that is needed in this domain, an individual can also work to optimize their individual interface with their EMR. Aggressive effort to become a high-level user will pay off over time. Can you afford to take a full day off to deepen your knowledge and facility with the EMR? Yes. Think about the pay off in terms of a career's worth of earlier departure from the office, fewer hours at home charting, and generally faster and more efficient interfaces with patients.

To the point of EMR usage, a scribe can (we hear) be a life-changing addition to one's practice. A scribe is a data entry specialist whose sole purpose is to interface with the EMR in real-time during patient visits and the data supporting their use is promising. A prospective study of over 25,000 emergency department visits found that visits per hour, relative value unit (RVU) production and patient

satisfaction were all significantly improved with the addition of a scribe [12]. A meta-analysis of five studies also showed improvements in clinician satisfaction, productivity, time-related efficiencies, revenue, and patient–clinician interactions in multiple types of physician settings [13]. A 2010 study on the usage of scribes in a urology office showed a dramatic improvement in physician satisfaction with office hours, improving from 19 to 69% with the usage of a scribe [14].

Job Fit

In her book, The Happiness Project, Gretchen Rubin writes, "People who love their work bring an intensity and enthusiasm that is impossible to match through sheer diligence [15]." Studies show that physicians who spend at least 20% of their professional effort on the type of work they find the most meaningful are at significantly lower risk for burnout [16]. Similarly, Mark Manson proposes a strategy: "choose the struggle you love." If one accepts that success in any endeavor will require a long and sustained struggle, then shouldn't one choose the struggle that resonates the most with them? In Fit Matters: How to Love Your Job, authors Carrick and Dunaway argue that when you combine rigorous self-knowledge with an understanding of an organization's culture, then you have the tools to make career decisions that will lead to better job satisfaction and improved performance [17]. They illustrate 6 elements of Work Fit: job fit, culture fit, relationship fit, lifestyle fit, and financial fit.

For the young urologist, this may provide some degree of guidance with career selection. Would you be happiest in the operating room until late at night perfecting your outcomes? Do you prefer teaching residents over laboratory work? Are you happier organizing the system that you work in than when confronted with a huge stack of patients to see in a day? They all require work, and you didn't sign up for medical school to avoid work, but they are different and can represent very different sets of challenges. Chose the challenge that will be the most gratifying to you.

A critical aspect of work–life synergy is the culture of the organization you choose to place yourself within. As much as strength-based leadership can guide you to new successes, toxic management can surely crush happiness and your soul. Quoting an excellent Mayo Clinic paper on the responsibility of management to prevent burnout: "Mistakenly, most hospitals, medical centers, and practice groups operate under the framework that burnout and professional satisfaction are solely the responsibility of the individual physician. This frequently results in organizationspursuing a narrow list of "solutions" that are unlikely to result in meaningful progress (e.g., stress management workshops and individual training in mindfulness/resilience). Such strategies neglect the organizational factors that are the primary drivers of physician burnout and are correctly viewed with skepticism by physicians as an insincere effort by the organization to address the problem. Casting the issue as a personal problem can also lead individual physicians

to pursue solutions that are personally beneficial but detrimental to the organization and society, such as reducing professional work effort or pursuing a concierge practice model [3, 10]."

Paradoxically, as a critical shortage specialty, urologists are in a strong place to drive that conversation, and to encourage change as we've discussed. We strongly recommend that not only do all leadership-bound physicians read them carefully, but also new graduates will benefit from understanding and identification of the markers of good work culture.

Self-reflection/Self-direction

Are you happy? How can you get happier? If you're reading this book, we assume you've been successful in school, so can you simply apply the principles that got you through college? Is it as simple as just going out and earning more money? A highly cited paper from the psychological world assesses the measures of success in terms of objective (status, pay) as compared to subjective measures such as satisfaction, and found that not only are the two poorly related, but higher status/pay had no relationship on job satisfaction. Even more interesting was the fact that there did appear to be a relationship that functioned in the opposite direction, higher satisfaction with one's job resulted in higher pay/status [18].

What has been shown to generate happiness? If we are to go down the analytic rabbit-hole toward the creation of happiness, we will find that there in fact are a few good answers. Each individual will have a different framework, but the key is to thoughtfully generate this framework. We submit that the Act of writing a personal, and/or family mission statement can be a key step. Experts in this field suggest one that is focused more on principles and "things I/we believe," than on tangible goals. Subsequent issues, challenges, questions, and opportunities can then be considered in the context of an individualized framework of values and principles [19, 20].

When you are formulating your manifesto, it can be helpful to consider what Ethan Roland has identified as the eight different "capitals" that compose real wealth: financial and material capital; living capital which refers to the health of your environment; social capital, or the connections we have with friends and family; experiential capital which is gained through experiences; intellectual capital, which is found through knowledge and ideas; spiritual capital; cultural capital, which can only be held by a group of people; and finally, health and well-being capital [21]. When you consider your personal wealth and happiness, consider each of these and that fact that, like the stock market, they are dynamic and can be added to or depleted. Using these categories with your own values assigned to each will help you to craft the manifesto.

Think Differently

Consider work–life balance. This construct suggests that we must constantly take from one to give to the other to achieve the balanced end. If we reframe this concept as work–life harmony, suddenly we can consider that the work and nonwork may mutually co-exist, one complementing the other, harmoniously. This is an example of thinking differently. Thinking differently is a powerful weapon against the enemy, burnout. An excellent, and brief, book, 7 Ways to Think Differently, by Looby MacNamara is a great starting point to begin doing just that [22]. The 7 ways of thinking differently can be used to approach personal, social, and global issues; from figuring out how your schedule will accommodate a trip to the dentist to how your healthcare system can optimize physician productivity without sacrificing well-being.

The authors propose seven categories: Abundance thinking, solutions thinking, systems thinking, thinking like nature, cooperative thinking, thinking for the future, and from thinking to doing. We believe that benefit may be found by focusing on the first three. Abundance thinking, as opposed to scarcity thinking, starts from the basic assumption that there is enough. There is enough for you individually, for society currently, and for society in the future. In this competitive health care market, it is easy to worry about the urology group across the street making more money, getting more cases, or increasing their market share. This is scarcity thinking which is driven by fear. Beginning with the basic assumption that there are plenty of cases to go around, one has the room to apply your focus to things like how to do the best job, provide the best care, how to create a workplace that is enjoyable for everyone. Abundance thinking allows you to shift from quantity to quality, scarcity of resources to flow or resources, and potentially from priority emphasis on financial wealth to a broader construct of wealth.

Solutions thinking begins with the basic assumption that for any given problem, there is a solution. When faced with the bureaucracy of medicine, it can be very easy to fall into the learned helpless mode that was described earlier in this chapter. Solutions thinking jumps past that by assuming that a solution exists, we just have to find our way to it. This is a far more empowering starting point from which to approach challenges, and it generates creativity rather than passivity. Rather than being reactive, you can be proactive. To adopt corporate jargon, challenges become opportunities. The deepest lesson from 50 years of learned helplessness data is that the default position of humans, when confronted by stressors, is passivity; it is the secondary application of control/avoidance behavior that prevents anxiety and depression from occurring. Solve, don't suffer!

Finally, systems thinking requires a shift from contemplating individual parts to thinking about wholes, a move from thinking about components to the relationships between the things that are made of those components, the proverbial forest for the trees. Your clinic is a system, possibly inside a hospital system, which

may be part of a larger healthcare system. Like a Russian nesting doll, each one is whole in itself and held within another whole. Fundamental to systems thinking is that small changes can have rippling effects. Accordingly, your small actions can have meaningful and significant consequences. Because those effects are often not predictable, it is important to be responsive to what emerges. Systems thinking can be an empowering way to approach what may otherwise seem like a Sisyphean task. And at the core of these useful thought exercises is the imperative to work for solutions, both small and large.

Self-care: Eat, Move, Learn

Eat: We should all be eating better. As we routinely tell our patients, what we put into our bodies has consequences. Whether it be adequate fluids and citrate to counteract stone formation or less cigarettes to decrease bladder cancer, what goes in makes a difference. As Dan Buettner, author of the much-recommended "Blue Zones" books that examine the characteristics of the longest living communities on earth puts it: "The calculus of aging offers us two options: We can live a shorter life with more years of disability, or we can live the longest possible life with the fewest bad years. As my centenarian friends showed me, the choice is largely up to us."

Dietary contemplation is beyond the scope of this chapter, but were we to suggest books for friends, colleagues, or thoughtful patients we would include Buettner's book as well as Michael Pollan's Food Rules: An Eater's Manual [23]. Quoting Pollan: "Eat real food, not too much, mostly vegetables."

Move: One core of our happiness is an intact and well-functioning physical being. Recently, attention and concern have been directed toward surgery itself, and within urology laparoscopic surgery especially has been cited as a potential cause of physical and musculoskeletal injury. One recent article suggested an "impending epidemic" of injury from modern surgical volumes and techniques [24]. Fortunately, a large recent study found no relationship to surgical type, gender, volume or duration of practice, despite the fact that half of those with pain blamed it on their surgical ergonomics. So, work on! While this is certainly an encouraging finding, the same study refocused attention on the importance of self-care: exercise and BMI were related to rates of back pain, with lower BMIs and higher rates of exercise both appearing protective [25].

And how can one achieve those lower BMIs? Imagine, for a moment, that there was a drug that was available to you (and your patients!) that had the following properties:

- It made you smarter
- It made you happier
- It made you 20–30% less likely to die at a given point

- It made you stronger and faster
- It was preventative of hip fracture and bone density loss
- It prevented depression as well as hypertension
- It prevented kidney stones and improved voiding function

Would you take it? Would you prescribe it? What if it was free? Well, it is, and we call it "exercise." So there. And while commonly available, the routine swallowing of the exercise pill can be quite a challenge. It turns out that, despite being truly a wonder drug, not everyone likes to take it. But they should [26].

Learn: After 4 years of college, 4 years of medical school, 5 or 6 years of residency, and anywhere from 1–3 years of fellowship, it is understandable to feel as if you have finally "finished" your education. However, while all of this training has helped you become an outstanding Urologist, it may not have given you all the skills you need to be a Medical Director, Informatics Officer, Chief Wellness Officer, or Associate Dean. Explore the opportunities available for professional development at your institution, outside institutions, or through professional societies such as the American College of Surgeons, or the American Association of Medical Colleges. Mastering new skill sets leads to self-efficacy and self-efficacy is antithetical to burnout.

Purchase Time

The two currencies that can be used in exchange for happiness are, in varying ratios, money and time. Can you generate more of one with the other? Time surely can be spent generating money—for more on that topic, refer to that modern concept "work." More interestingly, money can also be spent generating time, and yet we do bad internal math on this strategy. A large study spanning multiple countries showed that the usage of time-saving strategies, with a cost, had the benefit of improved happiness as well as relief of time-stress [27]. The findings in this study held across income levels and across societies, underscoring the durability of the concept. To quote the authors: "…people who spend money on time-saving purchases report greater life satisfaction."

The study itself focused on the completion of "unenjoyable daily tasks"; beyond that there were no specifics and we would leave the identification of exactly what that means to each reader. Grocery shopping? Consider a service that delivers groceries or even premade food to your home, many are available. Mowing the lawn? Hire the neighbor's kid or a service. Housecleaning? Maid. Reframe your thinking not to consider these services as luxuries, but rather buying back your valuable time. Certainly, many readers will observe that they find great solace and peace in gardening, cleaning, etc. The arithmetic will be different for everyone.

Conclusion

Wellness is important, but it is not easy. It requires thought, attention, and ongoing work throughout your career. Seize control! What happiness, and wellness, look like will be different for everyone. We hope that this chapter has provided some jumping off points for exploring what a happy and successful career as a urologist will look like for you.

Take Home Points

- Create Happiness
  i. Write your individual and/or family mission statement. Focus on principles and values, not as much goals. Review periodically, e.g., every New Years.
  ii. Consider using your money to purchase experiences and more time
- Assess whether you're burned out. Take the MBI, 5 min: available here through the National Academy of Medicine website, https://nam.edu/valid-reliable-survey-instruments-measure-burnout-well-work-related-dimensions/
- Control your career and turn it to your desires. Make it a vehicle for your happiness.
- Encourage your institution to install a Chief Wellness Officer
- Engage and develop an EMR management strategy. Consider a scribe. Engage your EMR vendor to help make it easier for you. Support change and advancement.
- Optimize your time and include validated devices:
  i. Exercise. Find a way, find something fun to do. It doesn't have to be hard, just enjoyable so that you'll keep doing it.
  ii. Eat Well
  iii. Meditate
  iv. Sing. Especially in groups. It lowers stress, relieves anxiety, and decreases cortisol levels [28]
  v. Actively work to develop and maintain relationships with friends and family
  vi. Build community.
- Great resource for all things burnout and happiness-related:
  i. http://www.ucdenver.edu/academics/colleges/medicalschool/facultyAffairs/Resilience/Documents/BurnoutPreventionMatrix-V4.3.pdf
  ii. Stanford's Well MD Materials, www.wellmd.stanford.edu
  iii. AMA Steps Forward Program, www.Stepsforward.org
  iv. AAMC Leadership Development, https://www.aamc.org/members/leadership
  v. ACGME Well-Being Initiatives, https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being

vi. American College of Physicians Well-Being Resources, https://www.acponline.org/practice-resources/physician-well-being-and-professional-satisfaction
vii. National Academy of Medicine Clinician Well-Being Knowledge Hub https://www.nam.edu/clinicianwellbeing/
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x. www.thehappymd.com/

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Chapter 15
The Power of History and Leveraging Past Institutional Success

Sutchin R. Patel

Why Is History Important?

When I have been asked "Why is studying history important?" three famous quotations come to mind:

"Those who do not remember the past are condemned to repeat it."—George Santayana

"If I have seen further, it is by standing on the shoulders of giants."—Isaac Newton

"It is not the strongest of the species that survives but the most adaptable."—Charles Darwin

Understanding our history can help us learn from the mistakes of the past, it can help us to advance our current knowledge by building upon past experiences and most importantly it can allow us to adapt to the inevitable changes that will occur throughout our careers.

A survey of urology residency program directors in the United States found that 83% of respondents felt that the history of urology should be taught in residency [1]. When asked why they believed it should be taught, 97% felt that it provided residents with a sense of historical perspective and connection to the past, 49% stated that it could provide better judgment and reasoning, 64% believed it could provide a more critical approach to contemporary surgery and 66% felt it could lead to a deeper understanding of professionalism. Although urologic history could bridge many aspects of resident education, in terms of the United States Accreditation Council for Graduate Medical Education (ACGME) core competencies, it would likely best fit under professionalism, and there is a growing literature that shows that history can also be used to help teach ethics [2–4].

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_15

Teaching the History of Urology

In 1902, Sir William Osler stated that the history of medicine could be taught "by lectures, historical clubs, questioning students during rounds as well as informally over 'beer and baccy' (tobacco)." However, Osler lamented that, "in the present crowded state of the curriculum it does not seem desirable to add the History of Medicine as a compulsory subject [5]." The increased time constraints on formal teaching during residency can make it difficult to teach the history of urology. These same time constraints in a hectic medical school curriculum were found to be the primary cause for a decline in medical history instruction by Genevieve Miller, a medical historian. She would write "Antiquarianism and mediocre teaching have tended to retard medical history in American medical education… most medical educators today are unaware of its positive values. Only by being relevant and excellently presented will the subject be accepted as an essential part of the training of physicians [6]."

The history of urology, when taught in residency, has to be relevant and is best incorporated into what we do on a regular basis. It can be taught on rounds or in the operating room. A personal example was that while on my pediatric urology rotation as a resident, the use of the Denis Browne retractor led my attending to ask the simple question "Who was Denis Browne?" This ultimately led to a history paper on Browne's contributions to pediatric urology [7]. Curiosity can be a great tool to help teach history—ask Why do we do what we do today? How did we do it in the past? Who are some of the eponymous names for surgical procedures, instruments, diseases, or anatomical structures? Writing a history paper can also be a great project for medical students interested in urology as it generally does not require the significant time needed for an independent research project and it serves as a great introduction to our field.

Besides incorporating the history of urology into rounds and the operating room, it can also be taught as introductory slides to grand rounds presentations, in a journal club setting (reviewing seminal papers in our field) and in some cases as dedicated lectures (generally covering important large topics in our field, for example, the history of the development of the cystoscopy, the history and evolution of the treatment of prostate cancer, etc.). Of the urology residency program directors queried in a 2013 survey, when asked how should the history of urology be taught in residency: 66% stated that it should be taught on rounds or in the operating room as well as introductory slides to presentation, 64% felt it should be taught in a journal club setting and 49% believed it should be taught in formal history lectures [1].

What resources do we have to help teach the history of urology? There are a few texts available that are solely devoted to the history of urology however none of them are comprehensive and many of them do not include the more current history of our field [8–11]. A few more modern but field specific historical texts include Urolithiasis: A Comprehensive History and The History of Technologic Advancements in Urology [12, 13].

Journal articles provide an easily accessible and fresh source of historical perspective. Hugh Hampton Young in the foreward of the 1st issue of *The Journal of Urology* stated "It is therefore evident that some common meeting place is extremely desirable—some medium in which all types of papers upon the field of common interest may appear—archives of *Urology*—historical, embryological, anatomical, biochemical, pharmacological, pathological, bacteriological, surgical and medical, experimental and clinical [14]." In 1973, *Urology* (Gold Journal) was founded and in its first issue, Pablo Morales, the journal's founding editor, wrote that "The success of the journal will depend not only on its appeal to the authors… but also to the audience that reads most of what is published" further stating that "other features will include essays on the history of urology [15]." However, since 2009 *The Journal of Urology* and *Urology* have taken a divergent approach to publishing history manuscripts with *The Journal of Urology* no longer publishing them and *Urology* having thus seen an increase in published history articles (35 articles from 2009 to 2017) [16]. A number of other urology journals do publish history articles including *The Canadian Journal of Urology*, *Journal of Endourology* and the *Journal of Pediatric Urology*. Given the ease of performing a literature search, for many, PubMed can be a great starting point to learn more about a urology history topic. Another good source for urology history are the annual volumes of *de Historia Urologiae Europaeae* published by the History Office of the European Association of Urology.

The William P. Didusch Center of Urologic History

We are fortunate that our specialty has its own dedicated museum and one that has been well organized and curated over the years. The story of our museum starts with William P. Didusch, who began his career as the staff artist for the then newly created Brady Urological Institute under Hugh Hampton Young and would spend his entire life illustrating and thus helping teach urology to many future generations of urologists (Fig. 15.1).

William P. Didusch studied from 1913 to 1915 under Max Brödel, the famous medical illustrator, who founded the Department of Art as Applied to Medicine at the Johns Hopkins School of Medicine, the first full-fledged department of medical art established by a medical institution [17]. In 1915 Brödel offered Didusch the opportunity to become the staff artist for the newly created Brady Urological Institute at the Johns Hopkins Hospital under Hugh Hampton Young. In 1949 he was appointed an instructor in urology at the Johns Hopkins Hospital by Dr. William W. Scott and in 1953 he became the Executive Secretary of the AUA. From 1928 to 1967 he served as the director of exhibits for the annual convention of the AUA. He was prolific in his work, serving as art editor for *The Journal of Urology*, illustrating 18 medical texts starting with Young's Practice of Urology (1926), and creating illustrations in over 600 medical articles. In 1968, Didusch proposed the creation of a urologic museum and donated his collection of

Fig. 15.1 William P. Didusch (1895–1981). Medical illustrator and the 1st Curator of the William P. Didusch Urological Museum, as it was called at the time [*Courtesy of the William P. Didusch Center for Urologic History*]

drawings to the AUA for that purpose. In 1971 the American Urologic Association established the William P. Didusch Urological Museum at the Association's headquarter in Baltimore (1120 North Charles Street, Baltimore MD) and appointed William Didusch as its first curator [18] (Fig. 15.2). The museum's initial collection began with Didusch's vast collection of urological drawings as well as a few instruments. Since then the collection has grown significantly and the museum was moved to the new AUA Headquarters in Linthicum, MD in October 1989 (Fig. 15.3).

With the museum residing at the AUA Headquarters in Linthicum, MD, I would encourage any urologist visiting the headquarters or the city of Baltimore as well as anyone interested in the history of urology to consider a stop at the museum. Letting the museum staff know in advance of your visit may allow you to get a private tour of the museum, including its collection of cystoscopes and urologic texts (Figs. 15.4, 15.5). The museum also houses the history exhibit from that year's annual AUA meeting for a portion of the year. The museum and its staff can be a great resource for questions about the history of urology or for any historical research in our field or about the AUA. The current website for the museum is www.urologichistory.museum.

Fig. 15.2 The original headquarters of the AUA (1120 North Charles Street, Baltimore MD) [*Courtesy of the William P. Didusch Center for Urologic History*]

Fig. 15.3 The current AUA headquarters (1000 Corporate Boulevard, Linthicium MD) and the site of the William P. Didusch Center of Urologic History [*Courtesy of the William P. Didusch Center for Urologic History*]

Fig. 15.4 Inside the William P. Didusch museum—the development of the cystoscope exhibit. [*Courtesy of the William P. Didusch Center for Urologic History*]

Fig. 15.5 Inside the William P. Didusch museum—library room [*Courtesy of the William P. Didusch Center for Urologic History*]

History as a Source of Institutional Pride

"I like to see a man proud of the place in which he lives. I like to see a man live so that his place will be proud of him."—Abraham Lincoln

When we are taught American History throughout grade school and in high school, it gives us a sense of civic pride and further binds us together as a country. It allows us to connect to our past and feel that we are a part of something much greater. In this same way, teaching institutional history can foster a greater connection among members of an academic department and lead to institutional pride. The history of a department should help the current residents and faculty feel connected to the accomplishments of the past and to further connect them to their mentors. An understanding of institutional history helps us map how a department started, what changes it underwent and what those that came before us accomplished thus leading us to better and more importantly predict where it is going. Many departments have a hall or a room with pictures of past graduating classes or portraits of former department chairs. But how many residents or even faculty members know something about the faces in pictures? These can be a great starting point for teaching institutional history.

Appreciating past institutional success can also be used to inspire future accomplishments. An important part of this is recognizing and celebrating current success. For example, when a nation wins a medal at the Olympics the success of that individual is celebrated by the entire nation, whether it be a large or small nation. The same can apply to academic departments. The success of an individual within a department can lead to institutional pride and further inspire others in the department. Furthermore, the recognition the individual receives sends the message that his/her work and success is valued. Do not underestimate these shared experiences and the positive effect it can have on departmental morale.

Another vehicle to both chronicle and formally acknowledge the accomplishments of individuals in a department is a departmental newsletter, or regular communication. Starting one does not always take a significant time commitment, but does require careful review for content and influence. The newsletter can be used to acknowledge the achievements/work/awards of individuals, announce upcoming lectureships, introduce new residents, faculty and staff members, and serve as a record of the history of the department. Each newsletter is a snapshot of the department at the time and the combined archive of newsletters can chronicle the history of the department. Other advantages to a newsletter are that it can be sent to former alumni to keep them in touch with the institution and can also be used to help in departmental philanthropy.

History for the Private Practice Urologist

The institutional history of hospitals and physician practices in your area can be helpful in navigating local changes in health care. This historical perspective can be difficult when first joining a new practice but speaking to those that have been

Fig. 15.6 Annual AUA history exhibit publications [*Courtesy of the William P. Didusch Center for Urologic History*]

practicing in your region for some time can be helpful in understanding how hospital systems have developed and possibly underlying politics in the region. Like any history, understanding the past may help to prepare for future changes in health care in your particular region.

Anecdotally, I have also found that patients may enjoy learning the history of urology. Whether it be how catheters were developed or the development and evolution of how we treat urologic disease today, a comment on the relevant urologic history regarding a patient's condition can many times lead to an interesting conversation. Each year the William P. Didusch Center for Urologic History puts together a history exhibit in the exhibit hall of the annual meeting. At the exhibit each year is a free publication outlining the current exhibit and short vignettes on medical and urologic history (Fig. 15.6). I have found these publications to make for great reading material in the waiting room of our office as a number of patients have commented on how much they enjoyed reading them.

Professor Emeritus

The title "Professor Emeritus" used to be given to select professors after their mandatory retirement age of 65. Emeritus in Latin means "deserved" or "earned" and with the abolishment of mandatory retirement for tenured faculty in colleges and universities in 1994, the title emeritus was bestowed upon a retiring professor as a deserved honor. Whether older faculty members or professor emeriti are still as active as they once were, their perspective on our field and their experience can be an invaluable resource to us.

Many of these individuals have had a full career—they have risen through the ranks and achieved significant academic success. They have seen the changes that have occurred in our field and have evolved in order to be successful. They can provide significant perspective, can be invaluable in terms of how to work through institutional or political problems and can be great mentors. Furthermore they tend to have a great repertoire of amusing stories of their experience. Like the oldest storytellers, some of their anecdotes can be quite legendary.

"The great force of history comes from the fact that we carry it within us, are unconsciously controlled by it in many ways, and history is literally present in all that we do."—James Baldwin

Take Home Points

- The benefits of teaching the history of urology include: (1) providing a sense of historical perspective and connection to the past (2) allow for better judgment and reasoning (3) provide a more critical approach to contemporary surgery and (4) lead to a deeper understanding of professionalism.
- For the history of urology to be effectively taught it has to be relevant and incorporated into the regular residency schedule (taught on rounds or in the operating room, as part of introductory slides to a lecture, in a journal club setting, and in a formal dedicated lecture).
- The William P. Didusch Center for Urologic History is an excellent resource for studying the history of urology as is the annual AUA History Exhibit.
- The history of an academic institution can be used to build institutional pride and inspire its current members. Departmental newsletters can serve to further acknowledge and celebrate success, introduce new residents/faculty/staff, announce upcoming events and lectureships, keep alumni in touch with and connected to the department, help with departmental fundraising and finally chronicle the history of the department.
- Patients may also find small historical anecdotes regarding their current treatment or illness interesting and a prompt for interesting conversations.
- Emeritus Professors can serve as great mentors and provide a unique perspective on the changes in our field.

Acknowledgements A heartfelt "Thank You!" to Tupper Stevens, Jennifer Kennedy and Michelle Matthews for the photographs used in this chapter and for all they do for the William P. Didusch Center for Urologic History.

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Chapter 16
Re-Evaluating Yourself

Stephen Y. Nakada

Now that we have arrived at the end of the journey of "Navigating Organized Urology," a re-evaluation discussion is in order. In fact, part of this journey has led me to believe that this book can be applied outside of our field of urology as many of the principles and chapters are hardly limited to urologists alone. Chapter 1, Knowing Yourself, focused on the here and now; but now we will focus on key attributes to moving forward once you have experience in the roles of all of the prior chapters. Probably the clearest truth to most people in re-evaluation is, while your core values and styles do not really change, the details, impressions you make, and the way you present yourself does. In my opinion, it is the external factors, that we typically do not control, that lead much of the way forward. That is not to say you do not control your future, but more to say a career is typically about series of decisions you make based on your opportunities and timing. The overall strategy does not change; performance first, purpose second, and passion if possible. At this stage, some straightforward, yet important questions to ask yourself are, "How am I different today than when I first started?," and "What has worked well?," "Have I enjoyed the ride thus far?" Harder questions include, "Have I made any key mistakes, and what have I learned from them?," "Am I truly on the course that I want to be on?," "What remains as areas of improvement for me?" (Fig. 16.1). This chapter will address these questions and potential answers, and how those answers will shape the way forward.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1_16

Easy questions to ask yourself:

"How am I different today than when I first started?"

"What has worked well?"

"Have I enjoyed the ride so far?"

Hard questions to ask yourself:

"Have I made any key mistakes, and what have I learned from them?"

"Am I truly on the course that I want to be on?"

"What remains as areas of improvement for me?"

Fig. 16.1 Easy and hard questions to ask yourself

Setting Future Goals

First off, if you are reading this book you likely have some future remaining, or in other words, "you still have some runway." While I think setting your first set of goals (Chap. 1) is important, undoubtedly the next set of goals, or your true "long term vision statement" has become more pressing if not done so already. This is because you have some performance history, and your window for opportunity is smaller, and most likely you have changed, probably for the better. When setting goals, to understand how you have changed is important, as your value system and strategy can be more focused. As you progress in your career, the idea of focusing on just performance, and everything else will take care of itself, begins to lose value. By now, you have some idea if you are leaning toward research, innovation, leadership, education, or industry. That said, available opportunities and the current trends in the field become very relevant to you, and your engagement in these trends creates much of your value. Looking at second jobs or new opportunities makes great sense, even if you do not move. In many cases, you will learn you have it best at your current job.

A substantial expense and sweat equity has been put into your career by both you and your home department or group at this stage, so any opportunity will have to really add value to your career or personal life. Sometimes if things aren't working out, such as your department or leadership is in transition or turmoil, there is a sudden need for change, and that can be the best thing to do.

One important question is, who can advise you on these matters? Generally, I would be very cautious about this, and I recommend confiding in a trusted, senior mentor. While your colleagues may be trustworthy, they may learn from you about an opportunity for themselves! Moreover, inevitably word gets out about either your dissatisfaction or desire to move, and this generally has negative effects on local relationships. Subordinates offer less help, and information shared at this level can be even more destabilizing.

I have spent my professional career at one institution, and cannot give personal anecdotes on the effect of changing departments, or paths. My observation is the

better your performance, the more options you have. Overall, staying power has great value, although there is a cost. Changing jobs allows you to bring a new culture to the team, and you will learn much from a different system. In addition, there may just not be the opportunity you seek at your current location, necessitating the strategic move.

Personal reasons can also be powerful motivators for a mid-career move. The old adage is that it costs you 6 months of productivity to catch up from a move, but this is strictly research driven. If you need a change of environment, your productivity in fact could increase dramatically with a change of scenery. Personal moves can have the additive benefit of a more stable home environment, which can be key to success. I would always make a list of why you want to move, and why the new destination is better than your current spot. Reading both, these lists must be integrated, and compelling for you to consider moving (Fig. 16.2).

It is at this time new goals can be set. Perhaps leadership, innovation, or educational roles are in your future. Generally, research is a tough "new" goal due to the early commitment needed to succeed. Your mentors, and chair or Dean can be strong sounding boards. My view is that by careful observation, you can identify new directions that can suit you. I think the mistake many make is not to verbalize these interests at the right levels (people in this role, perhaps even not at your institution). Getting to these goals will be addressed in the next section.

Just a word on the "lateral transfer." I believe this is a dangerous thing, mostly because without an inherent "win" upon arrival, your upside may be tapped out professionally early in transition. Generally, harder work will be needed to get to the next level (if that is what you seek) if you take a lateral move, as you will have to prove yourself, since the institution or group wouldn't grant you the position up front. Also, there can be a sense of bitterness, or disengagement when you make a

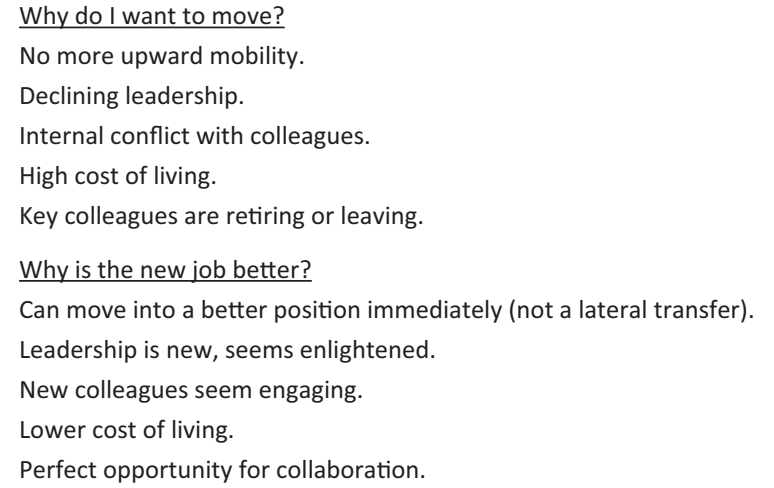
Why do I want to move?
No more upward mobility.
Declining leadership.
Internal conflict with colleagues.
High cost of living.
Key colleagues are retiring or leaving.
Why is the new job better?
Can move into a better position immediately (not a lateral transfer).
Leadership is new, seems enlightened.
New colleagues seem engaging.
Lower cost of living.
Perfect opportunity for collaboration.

Fig. 16.2 Questions to ask when changing jobs

lateral transfer. I am not saying not to do it, but it is worthy of extra consideration. This could come as further negotiation with your current leadership, colleagues, and a clear understanding of your path ahead. Generally everyone feels taking a new job is a "leap of faith," but I believe the main leaps of faith you can take professionally are lateral transfer and early retirement.

Continued Personal and Professional Growth

There is no more powerful learning tool than close observation of high performing people, or people you hope to emulate. I jump at opportunities to work with our system leadership, first to help the cause as it is my job, but I also to know that I will get the added benefit of observing the leadership closely, seeing how they formulate a plan, strategy for that plan, and watch the subsequent execution. Of course, things don't always work out, which is also a learning opportunity. Similarly, with experience, I have learned to involve my faculty more in strategy and execution, both for their assistance and their education.

I remember a wise chief resident once told me when I was an intern on trauma call, "the more senior I've become, the more I ask questions. So do you really expect to not have to call me tonight?" That is a powerful statement, with multiple messages: 1. I expect excellent care from us tonight, 2. Call me, not the attending, 3. I recognize your inexperience and it's ok. The astute resident can learn this valuable communication lesson, which potentially helps the resident learn how to message triage nursing, medical students, and others in the emergency room. Good or bad, stressful or gleeful, there is always a learning opportunity. That's a key thing to remember.

A common question is "How hard should you push your own agenda?" Let's say you are an associate professor, and have not had the opportunities of others with similar abilities, backgrounds, and accomplishments. Do you push this with your chair, or others, or remain silent? The first question is, are you really equivalent? Have you looked in the mirror closely enough? Your CV may look the same, but is your punctuality, reliability, and attitude equivalent? Nobody likes a nitpicker, or a complainer. I recommend rather than pushing for opportunities, I would ask about how you can help, and what you could do better. You will generally get to the same end but with more grace and aplomb than pushing your agenda. Academic urology is not always fair, but it is more transparent than many professions. In our department we have a newly instituted code (Fig. 16.3). This code has multiple messages, and the list is long enough that there is something for everyone. Reading into our code, we say a few key things: be prepared, do it right, and trust the system. Next the code addresses how to behave to get back on course if the wheels come off. But they are just words, what is really accomplished here? I believe it is always good to clarify department values, as it helps each team member to work under a credo and function with less fear, as long as the values are protected. Perhaps you or your team needs a code, and perhaps

Be accountable.
Read about it first.
Delegate with discretion.
Trust that it is a meritocracy.
Rather than argue, offer suggestions.
Rather than complain, create solutions.

Fig. 16.3 House rules

it could read like this one. More importantly, start with common guidelines for behavior whenever possible. This is a case where guidelines can be more freeing than "restricting."

Ongoing development can be vital, and helpful, but pursuing this in a busy time in your career is challenging. My viewpoint, as you become more senior, and more skilled, is that you can buy time, and take courses or take a personal or group retreat to recharge. Most of us do not do this enough, and this can be very helpful. Time is the most precious commodity we have, and generally urologists do not lack for salary, unless other circumstances more personal than professional have intervened.

The Only Constant Is Change—Adapting to Change

This is the most important lesson in this chapter. We have addressed the various generational gaps and gender sensitivities in earlier chapters, and from all this the one thing that is clear is that the ability to change is a "superpower."

There is nothing more difficult than to change [1]. I am always wary of someone who says they are old school. To me, old school is dead school. So if you are "a little old school," you are at the very least, "a little flawed, or in the process of extinction." Old school values, such as hard work, blind passion, intense loyalty, may sound good but are far from modern or as relevant as in the past. To me, the old school approach is like riding on a horse with a rifle into battle against a fully engaged tank division. It has some charm, but the only other saving grace is that you will die painlessly and quickly.

Ego and respect are also problematic values. No matter who you are, leave your ego at the door whenever possible. If you feel the need to say or do something egotistical, leave. Do not pursue that situation in the present, and by all means do not send an angry email! Regroup, and fight another day if needed. Generally 24 hours, if you have it, is the best first strategy. Reassess in your mind what happened, and decide if you in fact have a case, and if so, manage the situation with surgical precision, like resecting a cancer. If not, good for you that you walked away.

Respect is more complicated. I also worry if someone tells me they want more respect. Why? Because they are a Professor, or Section chief, or Department

chair? Today we live in a "what have you done for me lately society," or more accurately what have you done for me today environment. You can seek respect, but in the end you earn respect, most likely every day, every hour. We work in a hierarchical environment, of rank, or full partner status in the practice setting. While important at many levels, the "privileges of membership" can be the source of serious indiscretions. Again, the emphasis must be on self-improvement, moving forward, and adapting to, not living on past accomplishments and times. One of my colleagues reprimanded a young resident for addressing him by Dr. X, rather than Professor X. This got back to me, and Professor X said he had earned that title, and deserved respect. While there is some truth to that, I had trouble not visualizing him on a horse with a rifle.

So how do you learn to adapt? I have a few thoughts. Knowing yourself is really key here, as you may think you're adapting, but you're not. Ask others, watch others, and mentor others with interest. With time, you can learn a lot from your mentees, by how they respond to compliments and criticism. In general, the more positive you can be the better. In social situations, your adaptive ability will show. Who is drawn to you, who asks you for advice? This can be telling. Do subordinates primarily "just pay homage" or do they appear to be interested in talking to you? What about your younger colleagues? In the end, continue to refine your approach to best meet the needs of your team.

Next, assume anything is possible. If someone brings an idea to you, the worst thing you can do is just shoot it down. It gives you the image of old school; any innovator would tell you that. Ironically, some of the most ridiculous statements have become the future of our field. To me, the most memorable in my era of training was the fact that "minimally invasive (laparoscopic) radical prostatectomy is dead." Then came the robot, leading Professor Mani Menon straight to every accolade organized urology can offer for his work pioneering the robotic prostatectomy [2].

Finally, adaptation requires study. We covered social media in Chap. 13. This is yet another medium that some embrace and some do not. Regardless, in my view it is a critical avenue of communication and learning, but there are precautions. Those who can adapt are the "ultimate students," who keep getting better against odds. For instance, Bernhard Langer, who is over 60 years of age, is technically a better golfer than in 1985 when he won his first Masters [3]. Now urology isn't golf, but certainly history would have told Bernhard his skills would begin deteriorating after age 57, but he did not believe that. We are in the process of "retiring" surgeons at 70, but *maybe*, there are some surgeons at 70 who are better than surgeons who are 45. Perhaps the young generation may have to adapt to the older generation as well.

To summarize, all of my comments in Chap. 1 and this chapter are my opinion, not fact or literature based. The goal is to provide you with some of the frameworks I have used in my career, and I honestly have interest in your feedback. Undoubtedly, many of you in reading this will find errors, disagree, or provide valuable suggestions. Please do so, and good luck!

Tips for Re-Evaluating Yourself

1. Your career cannot be scripted, but study many scripts!
2. Education, and more importantly learning, is important at every stage. You do this EVERY day.
3. Adaptation requires leaving any old school ideals, ego, and history at the door. Change is a superpower worth mastering.

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S. Y. Nakada and S. R. Patel (eds.), *Navigating Organized Urology*,
https://doi.org/10.1007/978-3-030-20434-1

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